

Teachers' Processes
of
Negotiating Meaning of New Curriculum

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Abstract

This qualitative study addresses the question of how teachers negotiate meaning of new curriculum to better understand how curriculum is transformed from a theoretical construct to a practical one. Through interviews with 5 teachers, their experiences were examined as they negotiated the process of implementing new curriculum. Three theoretical constructs provided the entry point into the study: epistemology, teacher knowledge, and teacher learning. Using inductive analysis, 4 points or attributes of negotiation emerged: reference, growth, autonomy, and reconciliation. These attributes provided a theoretical framework from which a constructivist conceptualization of teacher learning and teacher knowledge could serve to understand the process of how teachers negotiate meaning of curriculum. Studied and theorized in this way, teacher knowledge and teacher learning are seen to be inextricably linked in a relationship that is dynamically changed by forces of stability and instability. Theorizing the negotiation of meaning from a constructivist epistemology also strengthened the assertion that negotiating meaning is a unique structural process, and that knowledge construction is therefore unique to each knower and subject to experience in a particular time and place. The implications for such a theory are, first, that it questions the legitimacy of privatized teacher practice and, second, that it calls for a renewed conceptualization of collegial network and relationship to strengthen the capacity for negotiating meaning of curricular initiatives. Understanding the relationship of curricular theory and negotiating meaning also has implications for curriculum development. In particular, the study highlights the necessity of professional discretion and the generative process of negotiating meaning.

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Table of Contents

	Page
Abstract	ii
Acknowledgements	iii
List of Figures	vii
 CHAPTER ONE: INTRODUCTION	 1
Background: The Problem	1
Background: The Context	5
The New Curriculum: Creation Studies Curriculum	7
Purpose of the Study	9
Theoretical Framework	10
Rationale: The Researcher	11
Rationale for the Study	13
Outline of the Remainder of the Document	14
 CHAPTER TWO: REVIEW OF THE LITERATURE	 16
Theories of Knowing: A Historical Perspective	16
Curriculum	29
Teacher Practice	35
Constructivist Constructs of Teacher Learning and Knowledge	43
Chapter Summary	53
 CHAPTER THREE: METHODOLOGY	 55
Interpretive Approach to Research	55
Qualitative Research	56
Site and Participant Selection	58
Data Collection	61
Data Analysis	66
Methodological Parameters	73
Establishing Credibility	74
Ethical Considerations	76
Chapter Summary	79
 CHAPTER FOUR: RESULTS OF THE STUDY	 80
Points of Reference	80
Points of Growth	100
Points of Autonomy	112
Points of Reconciliation	126
Chapter Summary	140
 CHAPTER FIVE: SUMMARY, DISCUSSION, AND IMPLICATIONS	 142
Summary of the Study	142
Discussion	145
Implications for Teacher Learning	160
Implications for Curriculum Development	166

Implications for Further Research	169
Final Thoughts	171
References	172
Appendix A: <i>Creation Studies</i> – Social Studies Framework	181
Appendix B: Interview 1 Questions	182
Appendix C: Interview 2 Questions	183
Appendix D: Participant Background Survey	184
Appendix E: Ethics Clearance	186

List of Figures

Figure	Page
1: Constructivist model of teacher knowledge and teacher learning	158

CHAPTER ONE: INTRODUCTION

The teacher is a mediator between the knower and the known, between the learner and the subject to be learned. A teacher, not some theory, is the living link in the epistemological chain [italics added]. (Palmer, 1993, p. 29)

The purpose of this study was to develop a theory of how teachers negotiate the meaning of new curriculum. It examined the experiences of participants who were living the process of implementing new curriculum. This research was conducted to contribute insight into why practice does not always appear aligned to the theoretical intentions of the curriculum design. Chapter one positions the study in a context and provides a background for the research. This is followed with a description of the curriculum used to investigate how teachers negotiate meaning of new curriculum. The purpose and rationale of the study are then articulated, and a theoretical framework is explained as a way to convey the process of negotiating meaning of curriculum.

Background: The Problem

With its underlying pedagogic and epistemic assumptions, new curriculum serves as a bureaucratic platform for education reform. However, as Palmer (1993) reflects in the opening quotation, it is the teacher who is the gatekeeper of curriculum in the classroom and, as Fullan (2001) points out, who is often held accountable for the success or failure of new curriculum. Whether curriculum is developed by government officials, textbook publishers, or other interest groups, it is ultimately implemented by teachers. It is the teacher who must negotiate the external and internal pressures of control and change. While experiencing both external and internal pressures, teachers choose to follow their own beliefs, understanding, and interpretations of the curriculum. As they

follow their own pathway, it is an open question as to whether they uphold the integrity of the curriculum.

The change to constructivist perspectives in a theory of teaching is an epistemic shift from teaching practices rooted in positivist ideas about knowledge and learning. From my own experience, the attempt to develop and implement curriculum from a constructivist perspective seemed as if it advocated on deaf ears, as if it were not making connections, and I observed a reduction of curriculum to coverage and fragmentation again and again even though theoretically the curriculum held the promise of a constructivist approach. Teaching strategies of inquiry, experience, and reflection were encouraged even praised because they were novel and exceptional and provided a positive sense of disequilibrium in an atmosphere of status quo, but they did not generate a followership or sustainability. Davis and Sumara (2003) argue that even though teachers have become familiar with many of the key terms and catchphrases of various constructivist discourses, they tend to be relatively unfamiliar with the deeper developments in epistemology that have driven the emergence of these vocabularies. They assert that at the level of teaching practice, constructivist discourses have often been co-opted to support traditional positivist thinking, and this “linguistic slippage” (p. 137) presents ambiguity and confusion to teachers. They assert this is because “the complex organic processes described and employed by constructivist theorists do not mesh with the imagined-to-be straightforward, mechanical structures of schooling” (p. 137).

Palmer (1993) points out that the way we teach depends on the way we think people know, and pedagogy remains reflective of our epistemic position regardless of curriculum design. This may imply that a gap exists between what we think we understand and believe theoretically and what we actually do in practice. Mitchell and Sackney (2000) describe these

discrepancies at all levels in educational institutions and suggest that it is necessary to confront the contents of theory-in-use and espoused theory.

Putting the theories into actual words may seem like a pointless exercise because, after all, we all know what we think. From our point of view, however, we only *think* we know what we think. Until theories of practice are visibly inscribed in some way, they are so much air – they exert pressure and they take up space but they don’t register on the senses and they can’t be handled or manipulated. (p. 19)

By articulating a theory of how teachers negotiate meaning of curriculum, we might better understand epistemic implications in a theory of practice and the discrepancies between curriculum documents and a teacher’s practice.

Specifically, the issue of curriculum implementation has been a particular *burr* in my own individual practice as well as in my observation of my colleagues. The conclusions asserted in previous research seemed to me stuck in a positivist framework (both in the research methodology and methods) and contributed suggestions that have been made before and that have been unable to sustain change or help to understand the experience of “putting into practice” any better. This left me with an unresolved understanding; it motivated me to look deeper.

Early on, I was connected to a study, “Curriculum Implementation in Ontario: Espoused and de Facto Aspirations for Inquiry” conducted by Tom Puk and Jim Haines (1998). It resonated with my own experiences where, in spite of education and practice and even apparent value, strategies for constructivist pedagogy did not find a place in practice by the preservice teachers who participated. For example, not only did these teacher-candidates not implement pedagogic inquiry in the classroom, but Puk and

Haines also observed that the supervising associate teachers did not significantly use strategies of inquiry in their classrooms. Puk and Haines observed that, in spite of an apparent desire for pedagogic inquiry, limited manifestation of this constructivist attribute occurred. To account for this gap between theory and practice, Puk and Haines concluded that there was little teacher education and little incentive to implement curriculum as inquiry rather than as transmission or coverage. They argued that this lack of education and incentive inhibits a teacher's ability to value inquiry as a credible and worthy pedagogic strategy, especially because it requires increased self-discipline and cognitive energy.

Perceived as a deficiency, the lack of education and incentive may appear problematic and difficult to reconcile, but the conclusions made by Puk and Haines (1998) may also be grounded in a positivist methodology that resulted in this interpretation. Puk and Haines used a survey to measure how much their participants valued inquiry as a learning strategy and also asked how many had applied the strategy to their practice. The study showed evidence that there was a gap between espoused beliefs and what in fact happened in practice, but from an interpretive perspective the study did not examine why the gap existed, nor did it delve into the experiences and perceptions of the teachers who participated. It was a quantitative interpretation of criteria established by the researchers. An interpretive approach brings to the surface other constructs that may be helpful in understanding this gap.

Viewed from a constructivist perspective, what may appear to be a problem of positivist reduction may in fact be quite different. When teachers work within a sphere of two epistemic philosophical positions, tensions are created between two belief systems and lead

to interpretations that are quite different from the curricular theoretical constructs. Puk and Haines (1998) observed that their participants expressed apparent value for a constructivist approach but did not investigate underlying philosophical beliefs about knowing. The findings of Puk and Haines set the stage for a study that examines how teachers negotiate the interplay and tension between traditional and constructivist perspectives in curriculum design and practical implementation. In doing so, a better understanding of why theoretical beliefs do not make their way into practice or appear not to be manifest offers better insight into the effects of ideological beliefs and epistemic assumptions on curriculum development and delivery.

Background: The Context

The context of this study is unique to the education landscape because it was set in an Ontario faith-based independent school system that developed and published much of its own curriculum while claiming to adhere to the expectations and practices set by the Ontario Ministry of Education. Curriculum development and publishing in a small independent educational system differs from other curriculum development in that it is not controlled by large school boards, powerful teachers' unions, and policy documents set by the Ontario Ministry of Education. Since an independent school system is not directly associated with political education policy, especially at the elementary level, there is an assumption of greater freedom and choice in both curriculum development and implementation. This school system provided a context in which innovative curriculum design could be developed and implemented with less political direction or constraint.

Although the choice of this context may at first appear to be an advantage, it is important to realize that ideological and epistemic tensions exist surrounding the

organization, the individual schools, and the classrooms where curriculum implementation takes place. Independently, each school is parent owned and operated. The school principal is the chief operating officer, subject to a local parent board, giving him or her operational authority guided by organizational policies. The daily operation and implementation of school policies are the responsibility of the staff as directed by the principal. In a linear organizational structure, the accountability of the staff flows through the principal to the board. The governance structure of this school system is organized and operates primarily with traditional positivist assumptions.

Mills (2003) asserts that positivist management and ideology are intensified in the culture of independent Christian school systems. Since these independent schools in Ontario are privately funded and operated, these types of school organizations turn to marketing and promoting in a consumer-oriented society where positivist rationalism seems to have better outcomes. Implementing innovative curriculum that has been ideologically rooted in constructivist thinking may cause tension in an organization that is firmly established in positivist organizational structures. Mills argues that when positivist assumptions prevail, these organizations are theoretically viewed as distinct from the actions, feelings, and purposes of the people and are seen as static and relatively unchanging. In that vein, positivist management creates a culture characterized by structures and protocols that benevolently see its constituents as objective objects. “Humans begin to be treated as cultural capital or ‘cogs in a machine’, manipulable, controllable, and disposable” (Mills, p. 133). Mills asserts that this kind of hierarchy can lead to the belief that some constituents in the organization are more visionary and trustworthy than others. Such a belief reduces teachers, parents, and students to passive

recipients of the vision and sees them as means to organizational ends. Mills argues, “The incentives of hierarchical organizations often disable workers by distorting their personalities and imprisoning them in a role” (p. 136) and do not enhance their personal and interpersonal capacity. Although these organizational tensions have the potential to be evident in any educational institution, this heightened tension provides a unique opportunity to explore epistemic beliefs of teachers as they negotiate the implementation of innovative curriculum design.

The New Curriculum: Creation Studies Curriculum

Since the local administration of each independent school had chosen to incorporate new curriculum entitled *Creation Studies*, I chose it as the vehicle for my study. Like the curriculum in the study conducted by Puk and Haines (1998), *Creation Studies* was designed with an underlying epistemological assumption that inquiry is an essential strategy for learning and knowing. The *Creation Studies* curriculum began as a series of 28 units spanning from grades 1 to 3, incorporating strands from life systems, science and technology, and social studies, and was subsequently developed for grades 4 through 6. The original authors, Salverda and Vaandering (2004), viewed their design as an active-reflective approach to learning, acknowledging that they had blended models described by Stronks and Blomberg (1993) and Wiggins and McTighe (1998).

As identified by Crawford (2000), the *Creation Studies* curriculum shows six key elements of a constructivist approach. First, an active-reflective approach developed through a *rhythm of learning* builds lessons that challenge the student to delight, investigate, give, and be still. The authors’ assumption that the learning experience occurs in a rhythm is a cohesive image of how the students should engage in meaningful

learning that is integral to their lived experience. The curriculum provides opportunity to situate the student in relevant authentic problems through investigation, developing student ownership and societal connection through responding or giving. Second, built into the rhythm of learning are regular intervals of reflecting upon these active steps. In a learning process, reflection provides a time for students to be still and grapple with their experience. Third, the pedagogic design begins with an organizing theme that is intended to keep the curriculum centred on an *enduring understanding* as students explore around the phenomenon rather than in a linear method. Curriculum built upon an enduring understanding improves authenticity and connection. Fourth, in each unit, Salverda and Vaandering (2004) remind teachers that the unit supplies them with a curricular framework, but this is not to replace their enthusiasm, initiative, and professional autonomy. Fifth, the units use various pedagogic strategies that encourage teachers to model inquiry while they create lesson plans, using templates that retain enough familiar structures to evoke just the right amount of tension for teachers to be motivated to take a step into their own creative unknown. Finally, assessment and evaluation are viewed as a blessing (Brouwer, 2007) where assessment and evaluation are thought of in terms of an ongoing process that not only measures learning but also supports and encourages it. Students appreciate feedback to scaffold their own learning and have opportunity to give back their new understanding through assessment and evaluation strategies. This meaningful feedback informs the adjustment of curriculum and pedagogy as a recursive process for an educational experience that is reflective and ongoing.

Perhaps what is most significant in the design used in *Creation Studies* is the incorporation of a *pause* or *still* phase after each active step of delight, investigation, and

giving. The authors assume that pausing is an integral element of this rhythm and not simply a strategy that teachers choose to implement or ignore. Their epistemic understanding assumes that students' capacity to know is influenced by their engagement in this rhythm. Salverda and Vaandering's (2004) use of the word *pause* or *still* represents an epistemic shift, where work and rest are not viewed as polarized but rather entwined, reinforcing and sustaining each other (Doll, 1993a), with each aspect being given equal value. As a constructivist attribute, when work and rest are viewed as inseparable, the value for pausing becomes evident and important in the rhythm of learning. Alerby and Elidottir (2003) note that pause is not empty but filled with reflection on what had been said and on what remains to be said. Palmer (1998) adds, "Silence gives a chance to reflect on what we have said and heard, and silence itself can be a sort of speech, emerging from the deepest parts of ourselves, of others, of the world" (p. 77). Stronks and Blomberg (1993) explain that pausing is a time where one does not consciously set out to achieve a particular goal. It moves the learner beyond the experience itself. It may be a conscious or unconscious exercise, intensified by emotion or a heightened sense of awareness. They argue that deep learning can occur without ever actually setting out to get something out of the encounter. "We learn as we rest in the coherence of things, as we allow ourselves to move freely (either relaxedly or intensely) among its various components" (p. 201). This freedom encourages confidence to plunge into uncertainty, knowing that rest will give the strength needed to resolve uncertainty into knowing and time to resolve disorder into order.

Purpose of the Study

The purpose of this study was to examine how teachers negotiate meaning when faced with new curriculum. This was an interpretive study that inserts teacher experience

into the process of curriculum development to better understand how curriculum is transformed from a theoretical construct to a practical one. In this research project, 5 teachers participated in implementing new *Creation Studies* curriculum. Three research questions guided the data collection. First, how did teachers' epistemic beliefs affect the negotiation of meaning? Second, how did the curriculum design affect the negotiation of meaning? Third, how did the curriculum implementation experience affect the negotiation of meaning? Using qualitative methods, this research used an interpretive methodological approach. It enabled the researcher to examine the lives of teachers in practice and to interpret the experience of practice in light of the literature and the researcher's own experience and knowledge.

Theoretical Framework

The theoretical framework provides three entry points for a study that looks to induce insight and provide a conceptualization of the understood realities of the participants implementing curriculum. Epistemology, teacher knowledge, and teacher learning are identified as three essential constructs from which to study how teachers negotiate meaning of new curriculum. First, epistemic assumptions have a critical role to play in how teachers negotiate and interpret meaning of new curriculum. In particular, the tenets of positivist and constructivist epistemologies are important in a discussion of how teachers grapple with the theoretical constructs of new curriculum. The second concept framing the study was teacher knowledge. The process of negotiating meaning was positioned in teacher knowledge that had been established and reconciled in past learning experiences. Third, negotiating meaning of new curriculum was a process of teacher learning as teachers grapple with the uncertainty and unknowns of new curriculum.

Together, epistemology, teacher knowledge, and teacher learning provide a framework from which to develop a theory of how teachers negotiate meaning of new curriculum.

Rationale: The Researcher

Approaching this research with an interpretive methodology made it important to identify my own assumptions about knowledge and learning. In doing this research, I discovered that my upbringing as an immigrant Calvinist Christian has largely influenced my beliefs about the world, both external and internal, my place in it, and, somewhat surprising for me, a view of knowledge. Belief in God has been a central tenet to Calvinist assumptions, and I have struggled deeply with the belief that empirical truth was an ultimate destination and was attainable through rational and scientific means. I did not realize how integrated my faith had become with a positivist ideology. Trueit (2005) explains that, historically, the Protestant reformation was closely linked to positivist thinking, with its humanism, mechanical philosophy, and rational logic. This positivist tendency was evident in my own perceptions of faith, which focused on the church, its religion, its ideology, and its definitive doctrine and interpretation. Yet by its very nature, the message of the Bible seemed to me an antithesis of this ideology. The more it was rationalized, the more it lost its power and passion, and ultimately this approach reduced God to man's own understanding, thus reducing God to man himself. God remained external because I had no rational way of making a relational connection. In this tension, it has seemed to me that blending the stability and logic of rationality with an acceptance and an awareness of phenomena outside of human reason provides greater capacity and freedom to explore and learn about God and his creation. Accessing this kind of knowing requires methodology (pedagogy) different from a rational approach; it depends on opportunity to inquire and develop a disposition of reflection

and openness. It also accepts that absolute truth is not as attainable as it is generative; instead of achieving absolute clarity, we continuously see glimpses that motivate us to keep seeking, and it is this search that has the potential to generate passion and joy for learning.

I recognized that there was an ideological tension for me, but I could not articulate it or make sense of it in a positivist framework. As Kincheloe (2003) and Slattery (1995) suggest, the dominance of positivist thinking created for me a conscious blindness, a belief in objective structures that seemed unchangeable. As Menzies (2005) points out, paradigmatic manifestations pull people collectively into a realm of consciousness where the process of reconceptualization brings awareness to the misconceptions that limit generative capacity. For me, this study has been and continues to be a journey of self-organizing, moving me away from the rigidity of positivist methodology because it left a sense of void and aroused tensions that evoked resistance. I sensed the disparity between what I wanted to know and understand and what the positivist research approach had the potential to tell me.

As I began to shift my own thinking, I began to appreciate that interpretive methodology has value dimensions that replace certainty and prediction with anticipation and imagination. Kincheloe (2003) explains that as researchers gain the analytical ability to “transcend this positivist certainty” (p. 152), they begin to access deep structures that are embedded in the complex social structures of people’s lives. It was for these reasons that I decided to engage in this study with an interpretive epistemic approach. The literature itself has had tremendous influence on unravelling my own experience in a way that is empowering and hopeful. My personal experiences and convictions bring me to do this research, and it is those convictions that lead me to believe that this work is worthy and useful.

Rationale for the Study

Curriculum development is an ongoing and powerful recursive process. This study focuses attention on the teacher in the curriculum development process and brings insight into how teachers, as the living link, negotiate meaning of curriculum. Assessing the capacity for negotiation of theory is an important and central consideration in how well it can be integrated and expressed in practice. In my review of the literature, I found the process of negotiating meaning of curriculum to be underexamined from a constructivist perspective. Previous research, such as Puk and Haines (1998), conclude that deficiencies in teacher education and lack of incentive explain the discrepancy between theory and practice. The research methods used by Puk and Haines measured the outcome of practice in terms of theoretical constructs and did not consider the actual experience, and perceptions of its participants. In particular, previous research has not adequately addressed the potential ambiguity that is created in the varying epistemic positions present in teacher beliefs, curriculum design, and the context of where curriculum implementation takes place. All groups involved in curriculum design and development stand to benefit from this research: the teacher, the writers, and the students.

From an ideological perspective, the study addresses how curriculum capacity can be improved by bringing to the surface philosophical constructs that most often remain beneath the surface. For example, the implementation process may be entangled with positivist assumptions where curriculum development and implementation are viewed as a mechanistic process, where there is an assumption that further education and practice would cause teachers to change. This study looks at the same process with a constructivist lens and appreciates the individual nature and contribution each person

brings to the process of constructing meaning in practice. This understanding has the potential to enhance personal and interpersonal capacity in such a way as to strengthen the reflexive relationship between theory and practice.

By bringing the teacher into the curriculum development process, a more meaningful understanding of curriculum and its relationship to practice can be identified. The dialogue and reflection integral to the interviews conducted for the study provide an opportunity for the participating teachers to reflect on their practice and to then actively consider what they were doing in their classrooms. The research process gives them an articulated experience to delve more deeply into the curriculum and to rethink their practice and is a mechanism for professional growth and reconciliation.

For writers of curriculum, this study is important in recognizing the complexity and uniqueness of the meaning-making process. This study has the potential to better inform the theoretical writing process and to explore the relationship between the writer and the teacher who ultimately brings the writing to a lived experience. For myself as a writer, listening to the narrative of the teacher gives me an opportunity to make sense of and to honour their experience and response to the curriculum.

In many ways it is the transformation of curriculum that becomes the product or *gift* of a process. As a collaborative construction of theory and practice, this product ultimately becomes the learning experience for the student. It is the student who stands to benefit most if the relationship between theory and practice is understood.

Outline of the Remainder of the Document

Following this introductory chapter, four chapters present the research project. The second chapter is a review of literature that begins with an historical perspective on theories

of knowing, in particular the development of positivist and constructivist epistemology. This epistemic discourse is then related to the historical development of curriculum theory and teacher practice. The literature review begins by contextualizing a contemporary epistemology which is used to identify and examine attributes of a constructivist model of teacher knowledge and teacher learning.

The third chapter explains the methodology and methods used to conduct the research. It describes site and participant selection, the process of data collection and data analysis, as well as the methodological parameters, procedures for establishing credibility, and ethical considerations. This study conceptualized the experience of negotiating meaning from an interpretive perspective and used qualitative methods to examine the lives of teachers in practice.

Chapter Four reports the findings of the investigation. Data collected from interviews, field notes, journals, and relevant curriculum documents were analyzed. Four themes or constructs emerged as points of negotiation in the process of negotiating meaning of new curriculum. Following an introduction, these four points serve as the framework through which the data are presented.

The final chapter begins with a summary of how the research took place and how the data were collected and analyzed. This summary is followed by a discussion of some key ideas that arose from the research. These ideas provide a foundation for a theory of how teachers negotiate meaning of curriculum. The chapter concludes with some implications for teacher learning, curriculum development, and further research.

CHAPTER TWO: REVIEW OF LITERATURE

This research focussed on how teachers negotiate meaning of new curriculum; therefore, the selected literature addresses aspects of teacher learning and teacher knowledge. First, an epistemic historical analysis provides a conceptual divergence that raises awareness of a paradigmatic shift in a theory of teacher learning, in particular on the emergence and tenets of positivist and constructivist thinking. Second, in light of this analysis, curriculum development is considered from positivist and constructivist ideologies. The third section discusses the epistemic tensions inherent in teachers' practice as a result of the paradigmatic shift. The final section draws from the literature constructivist constructs important in developing a theory of teacher learning as it relates to negotiating meaning of new curriculum.

Theories of Knowing: An Historical Perspective

The question of negotiating meaning is one of how teachers come to interpret or know, which is grounded in an epistemological inquiry. A branch of philosophy, epistemology is the study of human knowledge, its nature, its sources, and its justification (Appley, Covington, Hoyt, Latham, & Sneider, 1996). Since humans are historically and locally situated beings, an historical analysis that draws the attention to previous background assumptions better enables the researcher to contextualize a contemporary epistemology. Historically, its focus has not been so much on how people come to believe certain things or how they learn but rather with what warrants the knowledge claims are made (Thayer-Bacon, 2003). In the traditional sense, epistemology is concerned with what counts as knowledge. Thayer-Bacon draws attention to how

ontological shifts have affected traditional assumptions about epistemology, which further justifies an historical analysis.

The literature concerning educational philosophy and history is daunting, complex, variegated, and detailed. A comprehensive description is beyond the scope of this project. Instead, the selected literature is a brief, limited, and generalized description of about 500 years of history, highlighting two paradigmatic approaches: positivist and constructivist epistemologies. Its purpose is to demonstrate how epistemology has historically shifted and changed and how assumptions of knowing and learning are continually in flux as well. As Davis, Sumara, and Luce-Kapler (2008) remind, this discussion should not be interpreted as a linear chronology but rather as a discussion of conceptual divergences. They assert that concepts do not emerge and then die off but rather that humans are capable not only of hanging onto many different strands of beliefs but also of combining them freely, even when they are seemingly incompatible.

Historical Analysis of Positivist Interpretation

The European historical period of the “Enlightenment” is considered a remarkable turning point in the history of knowledge. This period is attributed to the emergence of mass communication (invention of the printing press), the rise of capitalism, the Industrial and Scientific Revolutions, urbanization, democratization, and European imperialism (Davis et al., 2008). Philosophically, it was a period that Davis et al. describe as “the triumph of scientific reasoning” (p. 164), marked by an intensification of *episteme*, knowledge concerned with matters of how the world worked (the physical) in contrast to the metaphysical. Doll (2005) and Davis (2004) attribute the work of Francis Bacon (1561–1626) and Rene Descartes (1596–1650) for the direction

that epistemology took with two major branches of thought: rationalism, most often associated with Descartes, and empiricism, commonly associated with Bacon.

Rationalism is concerned with *mentalisms* or unseeable mental representations, and empiricism is underpinned by *behaviourism* or measurable physical actions (Davis et al.). Truth is arrived at differently: Rationalism is based on logic, whereas empiricism is anchored in experience. Together, the emergence of these two branches was the catalyst for the positivist movement.

Descartes's theoretical separation of mind from body (disembodied knowledge) is a principal tenet of Cartesian dualism where human experience is divided into two realms: an internal world of feeling and sensation and an objective world of natural laws and phenomena. These laws operate apart from human perception and can be uncovered objectively. Essentially this ideology made it possible to assume an independently existing world and a fundamental division between mind and matter (Capra, 2002). In a theory where the body of knowledge is assumed to be unconnected to the mind of the knower, knowledge resides external to the knower, it is objective, and it can be attained by building an internal model or representation (mentalism) of the external reality. Thayer-Bacon (2003) points out that this dualism undergirds positivist epistemic assumptions about theory and practice and presupposes an authoritative and hierarchical relationship between the model and the reality.

The Cartesian perspective also asserts that all aspects of complex phenomena can be best understood by reducing them to parts and by piecing these elements together according to causal laws and through deductive thinking (Kincheloe, 2003). The principle of *cause and effect*, which was a central tenet of Descartes's thinking,

continues to be a natural way of looking at problems and problem solving (Doll, 2005). By removing the cause or problem from what Doll (1993b) terms the “hurly burly” experiences of life, this positivist conception of knowledge separates the knower from the known in order to create a transcendent object. Like Dewey, Doll refers to this conception as an epistemology of spectators, where knowledge, being disembodied, ethereal, untouched, and unaffected by thinking, is “a mere beholding or viewing of reality” (p. 139).

Davis (2004) argues that although rationalism and empiricism are different, the differences are rarely separated in practice because their sensibilities have a comfortable and complementary coexistence. Davis et al. (2008) attribute this conceptual comfort to a common underlying worldview and a number of shared assumptions:

Both assume that mental is distinct from physical, the self is an insulated and isolated kernel of being, and cognition is purely an individual phenomenon that happens inside the individual’s head. Further, both assume a stable, unchanging reality that can be understood by reducing it to its most rudimentary parts. (pp. 164–165)

Both rely on a series of dichotomies and most significantly on an assumption that mental is distinct from the physical. “Hence, although they are usually presented as opposites, they’re better thought of as flip sides of the same coin” (Davis et al., p. 97).

Doll (2005) describes Bacon as setting in motion a new attitude toward gathering and verifying knowledge. Bacon prescribed that all claims to truth must be verifiable, demonstrable, or measurable. Emerging from this thinking, the positivist movement saw analytic science and scientific method as the only legitimate routes to knowledge (Davis,

2004). “This sort of assertion represents a tremendous break with tradition [prior to Descartes and Bacon] because, although the roots of positivism extend into metaphysics, the movement involved an explicit denial of the possibility of access to metaphysical truths” (Davis, p. 69). Doll (1993b) notes that the dependence on mechanical measurement was integral to both the Scientific and Industrial Revolutions and further contributed to an epistemological shift towards positivism. Doll reflects,

However, the birth of mechanistic measurement, with its new realm of micro-precision, brought with it the death of nature: as a holistic, interconnected, living environment. Cosmologies changed. Knowledge became a separate, isolated quantity, removed from the experiences and wisdom of life. The cognitive emphasis shifted from making good judgments to making accurate predictions.
(p. 113)

Doll (2005) also observes that, in an atmosphere of efficiency, positivism has taught that rationality could achieve certain and absolute knowledge and that working towards those ends would benefit the human condition.

Historical Analysis of Constructivist Interpretation

The consequence of framing epistemology in positivist ideology is an interpretation of learning and knowing that ignores the question of what such knowledge is for or how it arises in experience. Thayer-Bacon (2003) argues that the loss of epistemic introspection has been due to the deep hold of positivist thinking and advocates for a revival of epistemological insight and criticality so that the discourse includes aesthetic, moral, and practical dimensions. In contrast to a separated, disconnected, and transcendent epistemology, she proposes a shift to a relational

epistemology where knowers are social beings in relation with and inseparable from others. In this epistemology, knowers are interconnected not just personally but also socially, culturally, historically, environmentally, and even beyond their own reason. As demonstrated in Bohm's (1996) atomic metaphor, people do not exist without the ecological relations in which they are placed. Here Bohm compares humans to individual atoms vibrating not in isolation but in a whole where the movement of one atom affects the movement of other atoms. Even if the atom wanted to be independent, it cannot; its movement is always affecting and being affected by other atoms far beyond its own field. Life, living, and learning are dependent on this complex network of interdependence (Capra, 2002) where, in a reciprocal manner, what one does deeply affects others and likewise what others do also has consequence (Mitchell & Sackney, 2009). Thayer-Bacon extends the epistemic conversation in the direction of relational assumptions by highlighting that individuals become and extend themselves as knowers due to their relationships with others. Here knowing is assumed to be dynamic, evolving, and relational, and knowledge is recast in terms of maintaining coherence as opposed to discovering established external patterns.

Reframing assumptions about knowledge can be located in the period of the Enlightenment. Doll (2005), Davis (2004), and Kincheloe (2003) demonstrate that the Cartesian view, although dominant, was not the only epistemological dialogue in the 17th century. They describe the work of Giambattista Vico (1668–1744), who, in contrast to Descartes, suggested that it is to history and myth rather than to rational logic that we should first turn in trying to understand ourselves and our place in the cosmos. To provide historical context, Davis asserts that even though the ideas of Descartes and Vico

seemed to conflict, they were seen as essential and complementary. People in earlier times had little difficulty deriving knowledge from *mystico-religious* beliefs that were situated in the realm of metaphysics as well as from their *logico-rational* beliefs that explained their physical experiences. The consequence was an acceptance of a comfortable coexistence of two epistemic domains that were understood to serve different, nonoverlapping, and essential purposes.

Doll (2005) posits that Vico's view of knowing began with emotion, which spurred one on to rational inquiry and contemplation. Vico believed that, in knowing, men first felt without perceiving, and in this feeling developed a "troubled and agitated spirit." This view of knowing which had first begun as an embodied response is in sharp contrast to Descartes, who saw knowing as first being disembodied or external to the knower. Vico's writing shows that he was cognizant of the relationship between the known and the knower in a rhythm of life, in a relationship where they equally sustain and depend on each other. Verene (1993) contemplates,

If only Italy had listened to Giambattista Vico, and if, as at the same time of the Renaissance, it had served as a guide to Europe, would not our intellectual destiny have been different? Our eighteenth century ancestors would not have believed that all that was clear was true; but on the contrary that "clarity is the vice of human reason rather than its virtue," because a clear idea is a finished idea. (cited in Doll, 2005, p. 46)

Vico saw knowing as generative and embedded in a life of continuous movement between myth and reason.

In Vico's view, this struggle is never ending, never "finished," it always recurs to retain its dynamic vitality, its power of primitive passion, and hence the cycle from primitive passion to rational reason must recourse back to primitive passion but at a higher, more conscious and complex level. (Doll, 2005, p. 47)

Vico's attention did not negate the roots of the mystical-religious ontology, and his epistemic position evolved differently than Descartes's.

For Doll (1993b), Vico's epistemic assumptions call into question the rigid dichotomies between objective reality and subjective experience, fact and imagination, secular and sacred, and public and private. Knowledge tied exclusively to an empirical-analytic tradition was not able to comprehend a wholeness that saw meaning and connection in the thoughts and feelings of the knower. Historically, the limitations that Cartesian ideology placed on knowing and understanding were identified by German sociologist, Max Weber (1864–1920), who argued that empirical principles applied to social science were not inclusive of the personal reasons or motives that shaped and guided individuals to act in their social realities (Neuman, 1997). Weber conceptualized knowledge as being constructed in the interactions and interpretations of people in a specific time and place (Schram, 2003); the knower and the known were seen as inseparable; the knower was a reflexive subject who was in constant dynamic interaction with the world (Kincheloe, 2003).

Davis (2004) suggests that at the end of 19th century, the nature and effects of language became central in determining knowledge claims. As in the vein of Weber, language came to be understood in terms of interpretation rather than naming or

labelling. The structuralist and poststructuralist movements arose out of this thinking, and along with them emerged constructivist discourse. Davis and Sumara (2006) clarify that the word *structure* here adheres to its biological meaning, where it is understood in terms of emergence as opposed to construction. “Structure in this sense is both caused and accidental, both familiar and unique, both complete and in process” (p. 13). Davis argues that constructivists can agree that individuals construct their own understanding on the foundations of certain truth, but a constructivist view is framed in terms of the emergence of structure as it undergoes continuous adaptations that are conditioned but never determined by the knower’s context. He further asserts that the emerging structure is unique to each knower and subject to their experience in a particular time and place. Very similar systems under virtually identical circumstances and subjected to identical stimuli can respond in dramatically different ways (Davis & Sumara). “An immediate implication of this sort of assertion is that there is no possibility of common or shared knowledge between knowers. Each person is compelled to construe the world in her or his own way” (Davis, p. 120).

Davis et al. (2008) explain that a diversity of understanding is also an encounter of many historical ideas that have evolved; therefore, ideas cannot be understood as separate and different entities. They assert that it is much more complex; like a genealogy, there are many branches that influence and predestine thinking. Davis (2004) points out that in a constructivist view, there are few actual common understandings of learning and teaching even though, he argues, this is not a dominant assumption. He states that there is pretence to think that we all understand in the same way, and the heart of this tendency resides in positivist disembodied assumptions about knowledge.

Understood from a constructivist lens, a diversity of understanding is assumed because meaning and knowledge arise from within, and mutual understanding is only possible in how that knowledge can be made explicit and related through action and language to others.

Constructivists are interested in the sources and dynamics of knowing as well as the manner in which it is interwoven and elaborated. Knowledge is an uncontrollable phenomenon because it arises in experience and is biologically enabled, culturally conditioned, and socially situated (Davis, 2004). Davis argues that all formal, explicit knowledge is abstracted from the physical, bodily sensations that occur as one “moves” through the world; each and every action contributes to knowing, and each and every knowing orients action. Unlike positivists, constructivists believe that cognition is not trapped in the brain but that the entire body is a cognitive system, a system that acknowledges the *fleshiness* of knowing. “This point is pivotal. For constructivists, bodily action is not evidence of understanding – it *is* understanding” (Davis, p. 131). “Cognition, then, is not a representation of an independently existing world, but rather a continual bringing forth of a world through the process of living” (Capra, 2002, p. 36). To know is to be capable of participating with requisite competence in the complex web of relationships among people, material artifacts, and activities (Gherardi, 2008). Knowledge is acquired through participation and is continually reproduced and negotiated; it is always dynamic and provisional (Nicolini, Gherardi, & Yanow, 2003).

In Doll’s (1993b) work, he draws on the principle of transformation in knowledge as central. Although he concedes that it can be unpredictable, Doll suggests that, within the connected ecological network of life, there is anticipation that

transformation is always possible and inevitable. Resonating metaphorically with Bohm (1996), the essence of Doll's epistemological position is much like a combustion reaction where constantly moving atoms arranged in preset patterns are placed in such conditions where ignition points (disturbance) provide the catalyst to deconstruct and reconstruct into new patterns that again are atomically coherent and in constant motion. Capra (2002) adds to Doll's conception by asserting that the key to the systemic definition of life is that these networks continually create or recreate themselves by self-organizing and transforming their components. This happens by networks undergoing continual structural change while preserving their web-like patterns of organization.

In his work, Capra (2002) discusses the scientific work of Ilya Prigogine, particularly how his theory of dissipative structures applies to living organisms and to the understanding of living itself, from which, he asserts, learning must emerge. Unlike a positivist concept where dissipation leads to entropy, Prigogine theorizes that dissipation must occur if transformation and survival are to take place (Doll, 1993b). Wheatley (2006) adds that dissipative structures were named to bring attention to their paradoxical nature. They dissipate or give up their form in order to recreate themselves into new forms. In a close interplay of structure and flow, a dissipative system is able to maintain a state of dynamic equilibrium and bring order to the chaos of changing forces (Capra; Thayer-Bacon, 2003). Wheatley explains,

A system can descend into chaos and unpredictability, yet within that state of chaos the system is held within boundaries that are well-ordered and predictable. Without partnering of these two great forces, no change or progress is possible. Chaos is necessary to new creative ordering. (p. 13)

The energy and dynamics of dissipative structures generate the transformation of new forms that Capra and Davis (2004) describe as a “bifurcation point,” a branch into a new state where new structures and new forms may emerge. The emergence of new patterns is representative of new knowledge and is determined by a transformational process that is initiated by the dynamic conditions available. Ecological in description, Davis argues that constructivist language is to be understood from this frame of reference; otherwise, it resembles positivist meaning.

In developing his constructivist curricular model, Doll (2005) looked to the work of earlier theorists (Jerome Bruner, Ilya Prigogine, Jean Piaget, John Dewey, and Alfred North Whitehead) and found that his theorizing reframed and reconceptualised epistemology. In particular, he contrasted Dewey’s descriptions of an epistemology of spectators or verification with that of an epistemology of experience. Experience shifts the focus of study to the recursive interplay between the known and the knower; conceptually Doll sees them as one, as knowledge is generated from within and also is transformed by the dynamic of time and context. Knowledge is not simply *out there* to be attained; it is dependent on the knower and the capacity in which knowledge can be generated.

Although Dewey (1859–1952) did not associate his work with constructivism, he contributed to the collapse of the theory/practice, mind/matter dualism (Thayer-Bacon, 2003) and focussed his ideas on the emergence of knowing through experience. Dewey (1960) dissolves the gap between theory and practice by showing that the subject matter of theory (the abstract) grows out of and returns to the subject matter of everyday concrete experiences; one lives, looks backward and forward, and then lives again

(Dewey, 1938). Dewey developed his idea through a theory of experience, where he assumed an organic connection between knowing and personal experience. Everything, he asserted, depended upon the quality of the experience, and every experience lived on in further experience (Dewey). He also assumed that learning was an innate disposition and embedded in biological life. It was dynamic and generative and began at birth and ceased in death (Shotter, 2005).

Like Vico, Dewey (1960) theorized that knowing began with emotion, a felt need, or a disturbance. “Something causes us to inquire, something disturbs us, unsettles us, interrupts the smooth, straightforward course of behaviour” (p. 136). Capra (2002) calls this disequilibrium a *meaningful disturbance* and adds that in the process of learning, humans cannot be directed but can only be disturbed. Mitchell and Sackney (2009) explain that different disturbances catch people’s attention differently and that, once their attention has been caught, people respond when they see compelling reasons to do so and in ways that are personally meaningful. As interpreted by Mitchell and Sackney, “meaningful disturbances are the triggers for a system to seek new inputs, and the energizing power of novelty [creativity] pushes the system to self-organize into new forms with new repertoires of activity” (p. 145). Davis and Sumara (2006) add that experience is better understood in terms of triggers than causes, and thus learning is a matter of transformation that is simultaneously physical and behavioural.

An indeterminate situation evokes a disequilibrium that attracts attention to inquire, but no situation is completely indeterminate; there are constituents of a situation that must be assumed to be settled so that one might engage in inquiry. According to Dewey (cited in Thayer-Bacon, 2003), once the inquiry is satisfied, knowledge is

present, but he emphasized that inquiry is a continuing process and settled beliefs are not necessarily settled for all time; they are open to the possibility of becoming indeterminate and therefore subject to further inquiry. Doll (1993a) describes this movement as shifting from disorder to order, and he argues that both are needed to propel the learner forward. As disorder pervades, the learner seeks order to make sense of the disorder and to establish equilibrium, and yet the learner cannot move forward unless motivated by disorder once again.

Phillips (1995) asserts that the ideas emerging from constructivist ideology deserve acknowledgement for bringing epistemological issues to the fore in the discussion of learning and the curriculum. In other words, the emergence of constructivist thinking opened epistemic introspection, an awareness of the effects of positivist thinking on epistemic theorizing. Kincheloe (2003), Slattery (1995), and Thayer-Bacon (2003) acknowledge that this has been an important “revival,” whereby there is a renewed interest in examining the conditions that inform definitions of knowledge and that connect the philosophic dimension to the domain of experience.

Curriculum

For Doll (2005), this ontological shift opens the door to new curricular possibilities that he proposes are both emerging and promising. In response to Schwab’s (1969) famous allegation that the “field of curriculum is moribund,” Doll asserts that, with an epistemic shift, a new curricular field has emerged where pedagogic possibilities are unlimited and immensely exciting for both teachers and students. Schwab himself speaks of this curricular renaissance as an inevitable and natural outcome of theorizing. He observes that theory is always limited as an abstract or idealized representation of real things, but theory in the face

of real acts, real teachers, and real children reveals that theories are radically incomplete. At some point, any theory falls short of comprehending the whole, and new theories emerge and take hold as a reaction to how the previous theories reveal their shortcomings or cracks. Davis (2004) adds that, as a genealogy, theories of teaching and learning emerge and unfold in a recursively elaborative process where new spaces of possibility continuously make themselves evident.

Positivist Curriculum Implications

More than 400 years after Descartes and Bacon, most school practices and curriculum continue to be influenced and driven by a positivist perspective (Davis, 2004; Doll, 2005). Gherardi (2008) summarizes,

Unquestioning faith in rationality has rendered it into one of the myths most deeply rooted in the Western collective consciousness, and the consequence has been that the mind has been given primacy over the body as the almost exclusive seat of the knowledge-building process. (p. 517)

Qualities of certainty, individualism, reductionist partitioning, and linear and sequential organizing continue to be evident at both subtle and overt levels and cast schooling as a linear process, eager to clarify and reduce ambiguity (Davis et al., 2008). Since knowledge is external and transmittable, for the sake of time, accuracy, and efficiency, prescriptive curriculum is believed to be the most effective tool for teachers and students. This is substantiated by Doll (1993a): “In curriculum matters, the metaphysical commitment to certainty has encouraged us to structure the curriculum *only* in sequential, linear terms and to consider learning *only* as a direct result of teaching” (pp. 282–283). Reynolds (2005) points out that positivist theories imply that learning should

be made as easy as possible with the least amount of tension and that knowing can occur mechanically and largely through repetition.

Implicit in teaching is an attitude that is most concerned with logical, carefully planned movements through topics, which is embodied in the phenomenon of the linear lesson plan, developed around a topic and independent of the group of learners. “The results were lessons and programs of study that, like prevailing beliefs about knowledge, were assumed to be independent of time and place and, hence suitable for everyone, everywhere” (Davis, 2004, p. 80). The power of knowledge as the external controlling object legitimates the presetting of goals and objectives, the predetermination of student experiences, and the evaluation of meaning and learning in terms of how closely the chosen experiences match the preselected objectives (Doll, 1993a). Since this system always works towards predetermined ends, it makes it an ideal one to measure. It is through the teacher’s skill of transferring these objectives that the curriculum is implemented to bring about the desired learning in the pupil. Students can be viewed as passive receptors; the more completely the teacher fills the receptacle, the better the teacher is, and the more meekly the students permit themselves to be filled, the better the students are (Grundy, 1987). As an underlying theory of learning, it is not a complex one, and though there is an appreciation for the difficulty of the task, it is a predetermined mimetic curriculum focussed on replicating simple forms of thought (Trueit, 2005).

In particular, Doll (1993a, 2005) offers Tyler’s curriculum model as an example of positivist ideology as it promotes linear, sequential, and prescriptive thinking. Tyler (1975) argues that curriculum development is a practical enterprise, not a theoretical study; it endeavours to design a system to achieve an educational end and is not

concerned with ideological positions or existential phenomena. Tyler's model incorporates key steps in developing curriculum: the identification and selection of learning objectives, the selection and organization of learning experiences, and finally the evaluation of the organizational framework to ensure that all has been properly achieved and completed. Doll (1993a) argues, "The Tyler rationale has led us to emphasize precisely defined, well-articulated, preset goals and a delivery system that matches the clarity of the goal statements" (p. 284). Grundy (1987) adds that at the time of Tyler's work, a technological consciousness was pervading the actions of those engaged in curriculum work, and even though Tyler disclaimed a technical interest and did not intend to be drawn into a philosophical (epistemological) discussion, his work aligns with and is easily interpreted by a positivist lens.

Constructivist Curriculum Implications

With implications for curriculum development, a paradigmatic shift and the emergence of constructivist ideology have brought to the surface an increasing awareness that positivist assumptions in a theory of learning have become "untenable" (Davis et al., 2008). In spite of this, teachers and educational organizations continue to use curriculum and teach in ways that resemble positivist ideology (Blomberg, 2007). Constructivist epistemology is in essence a theory of learning and not a theory of teaching, and this adds to the ambiguity of how constructivist assumptions in curriculum are translated in classroom practice (Davis et al.). Davis and Sumara (2003) assert that much of the ambiguity surrounding constructivist curriculum resides in the manner in which constructivist epistemologies are represented to teachers; that the core vocabularies in curriculum materials and professional development literature are

construed in such a way as to align and co-opt the positivist theories they are intended to critique. There also remains a host of institutional and cultural barriers (powerful assumptions, belief systems, and embedded practices) that are grounded in traditional positivist ways of thinking. These are so deeply entrenched in the collective psyche that many people are unable to negotiate or even contemplate alternative ways of thinking (Mitchell & Sackney, 2000).

Doll (1993a, 1993b) offers a theory of curriculum that integrates constructivist epistemology and speculates that, just as Tyler's model served as criteria for positivist curriculum theory, perhaps his conceptualization serves to define a constructivist one. Curriculum informed by a constructivist interest is not understood as a set of objective outcomes produced through the action of a teacher upon a group of objectified pupils; it is not a cause-effect relationship. Rather, curriculum is regarded as a process through which pupil and teacher interact in order to make meaning of the world. Doll (1993a) draws on the dynamic conceptualization of curriculum and sees it metaphorically as a *verb* rather than the positivist *noun*. Curriculum is no longer a theoretical construct but rather a cultural construction, no longer an abstract concept that has existence outside of experience but instead a way of organizing a set of human educational experiences (Grundy, 1987). It is not to guide learners towards completion but to provide them with experiences that challenge and enlarge their understandings (Thayer-Bacon, 2003).

Doll (1993a, 1993b) summarizes a curricular postmodern approach with four descriptors: A constructivist form of curriculum shows the attributes of *richness*, *recursion*, *relations*, and *rigor*. It is these words that help to imagine a curriculum that is ideologically different from the positivist approach. The curriculum must have qualities

that evoke just the right amount of indeterminacy, anomaly, chaos, disequilibrium, and disturbing qualities to ignite a student's inquiry (Stronks & Blomberg, 1993), and it is in this sense that Doll uses the word *richness*. *Recursion* is a reflective quality that is generative as opposed to being repetitive and is central to self-organizing. Reflection as a hermeneutical attribute, as expressed by T. S. Eliot, brings to the surface newness in each reflective phase.

We shall not cease from exploration

And the end of all our exploring

Will be to arrive where we started

And know the place for the first time [italics added]. (T. S. Eliot, Four Quartets:

Little Gidding)

Relation, an integral concept to constructivist thinking, is a shift from individualistic actions and focus to the complex dynamic of an ecological view where knowledge emerges from the relations or interactions that one encounters. Finally, Davis (2004) explains how Doll's concept of *rigor* is linked to possibility.

Teaching and learning are not about convergence onto a pre-existent truth, but about divergence – about broadening what is knowable, doable, and beable. The emphasis is not on what *is*, but on what might be brought forth. Thus learning comes to be understood as a recursively elaborative process of opening up new spaces of possibility by exploring current spaces. (p. 184)

A curriculum that is capable of generating emergent possibilities improves the quality of interpretation. Thus, Doll argues, the presence of possibility provides the *rigor* for a framework of knowing. With curriculum no longer being prescriptive, Doll

conceptualizes what must be brought forth through curriculum, and with the four attributes he offers a method of conceptual analysis from which to view curriculum.

Teacher Practice

Teachers and educational organizations, dominated by a positivist theory of knowledge, continue to practice primarily from an evolving positivist stance while grappling theoretically with literature and curriculum development that promotes alternative theories and dimensions of knowing. Since most initiatives for curriculum are preset and developed elsewhere and then given as documents to teachers to implement, there is an underlying positivist assumption that the negotiation process is essentially passive and instrumental and that teachers are professionally competent to enact other people's agendas in the classroom (Mitchell & Sackney, 2000). Clandinin and Connelly (1995) point out that these assumptions screen teachers from the subjectivity (fleshiness) of human agency that gave rise to the material and restrain them from engaging their own agency with regards to curriculum. Reform is something that has been done to teachers rather than something that has been done by teachers (Mitchell & Sackney).

Similarly, teacher knowledge and teacher learning concerning curriculum have mostly been defined as and located in professional activities outside of classroom practice. Mitchell and Sackney (2000) assert that professional development is intentionally organized so that it requires little intellectual struggle or emotional engagement, and keeping the activities at a low intensity is assumed to provide the most advantage and leverage for knowledge transfer. In a positivist perspective, the most legitimate opportunities for teacher learning are separate from practice, because when teachers are engaged in the work of their classroom, they are assumed to be competently

informed and well positioned to transmit appropriate knowledge to their students.

Teachers have come to rely on prescriptive curriculum, professional workshops, and external learning opportunities for professional growth, and yet the research has shown evidence that these kinds of initiatives fall short of achieving the desired teacher knowledge and action (Beijaard, Korthagen, & Verloop, 2007; Mitchell & Sackney, 2009). A focussed attention on designing curriculum that improves a teacher's capacity to translate curricular text more accurately, or writing "teacher proof" curriculum, is a positivist reaction to these concerns.

Aligned with constructivist thinking, Beijaard et al. (2007) conceptualize teacher learning and knowledge differently. They assert that practice itself is the dynamic space where the interplay of teacher learning and the reconciliation of teacher knowledge occur. Gherardi (2008) and Thayer-Bacon (2003) point out that shifting the attention to practice has epistemic implications, in particular, a movement away from Cartesian hierarchical assumptions to the legitimacy of practice in a theory of knowledge. As Gherardi explains,

When we give priority to practices over mind we contribute to a transformed conception of knowledge, which is no longer possession of mind, which is mediated and propagated both by interactions between people and by the material arrangements in the world, which is discursively constructed. (p. 523)

In contrast to positivist thinking, where knowledge resides in two dimensions, a constructivist view believes practice underpins an effective and necessary relationship between the two; a practice component is inherent in all knowledge (Seely Brown & Duguid, 2001). The activities of theory and practice are no longer distinct and separate

phenomena where one has authority over the other; instead, they are interdependent, reflexive, egalitarian, and inseparable, producing each other (Gherardi). The curriculum text does not determine the practice; instead, it is in a reflexive relationship with practice, a dynamic where each builds upon the other. When teachers see how curriculum theory applies to their practice, where it guides, confirms, and legitimizes it, they see the text as reinforcing and *naming* what the teacher is experiencing (Grundy, 1987). The dynamic learning process transforms the experience into a knowledge that has meaning and sustainability (Mitchell & Sackney, 2009). As teachers convert theoretical curriculum to action in their practice, their entire bodies are engaged in a learning process (Davis, 2004), and their behaviour and actions in practice embody the knowledge that has emerged from lived experience. A practice-based approach into understanding how teachers negotiate meaning in new curriculum offers a new ontology and a new epistemology (Nicolini et al., 2003).

Research reveals that teachers do not view themselves as learning while teaching and practicing (Hoekstra, Beijaard, Brekelmans, & Korthagen, 2007), yet a constructivist epistemology reframes what it means to negotiate meaning and does view this negotiation as learning. Hoekstra et al. find that most research on teacher learning has been studied from a cognitive perspective, based on positivist assumptions that a teacher's behaviour in the classroom is directed by teachers' rational thinking in relationship to their formal teacher knowledge. They note that previous research had raised doubts regarding these assumptions, concluding that teacher behaviour is also driven by less rational and informal aspects and contributes to another aspect of teacher learning. In an interpretive study, Hoekstra et al. investigated how teachers learned informally and, more specifically, how they learned

through activities they undertook when teaching in their classrooms. In teacher narratives, they found aspects in practice that were not well understood or accounted for in research, aspects that were not considered important or legitimate in the discourse of teacher learning and knowledge.

In the same vein as formal and informal teacher knowledge, Seely Brown and Duguid's (1991) work identified two dimensions of teacher practice: canonical (espoused/managed) and noncanonical (actual/lived). They found, like Hoekstra et al. (2007), that the details of practice (noncanonical) were seen as nonessential and unimportant in examining teachers' professional development. Instead, teachers were typically viewed and described as performing the curriculum according to formal descriptions of the text (canonical), despite the fact that practice rarely resembles such descriptions. They argue that deriving and limiting knowledge about negotiating meaning from a positivist lens that focusses attention on canonical practice cannot explain how teachers negotiate meaning of new curriculum. If practice is central to understanding teacher knowledge, then the canonical abstractions detached from practice potentially distort or obscure teacher learning because the experiences of noncanonical practice are not validated. Without the legitimacy of noncanonical practices, the divergence between curricular theory and teacher practice is perceived as deficient and noncompliant. Viewed from a constructivist perspective, the same teachers would instead be seen as creative, implementing educational reforms as they interpret and respond to the direction of their motivations and desires within their own moral professional practice (Clandinin & Connelly, 1995; Seely Brown & Duguid). This is an alternative interpretation of agency where teachers are assumed to construct their own understanding of curriculum and to produce their own responses in active and self-

controlling ways that reflect their own beliefs, attitudes, values, and knowledge (Campbell, 2006).

Grundy's (1987) discussion of *praxis* (practical action) and *poietike* (productive action) distinguishes between two descriptions of practice. Productive action depends upon the translation of an idea into action through the mediation of the teacher's skill (techne). In contrast, practical action is reliant on the disposition of *phronesis*, an attribute of prudence and wisdom, knowing when to refrain and when to act and knowing how action fits in the wholeness of the situation (Grundy). It is ontological in nature and guides the teacher into making *good* judgements by engaging in an existential choice. In negotiating meaning in new curriculum, practical action implies a shift away from curricular authority to professional discretion (Boote, 2006) where teachers interpret and adapt curriculum as an expression of their own practitioner- oriented wisdom and judgement (Campbell, 2006). As teachers negotiate meaning in new curriculum, their decisions are directly linked to their students and the motivation of being a *good* teacher (Neufeld & Kompf, 2002). The time and effort teachers commit to their preparation and teaching is not a product of external pressures but rather comes from being dedicated to doing a good job, to providing effective care within a work context that is actually diffuse and ambiguous (Hargreaves, 1994).

As a result of the divergence of formal and informal teacher knowledge, canonical and noncanonical practice, and productive action and practical action, Clandinin and Connelly (1995) argue that, professionally, teachers straddle different epistemological positions, each of them rooted in differing views of theory and practice. "As educators, therefore, we work in an uneasy professional environment never sure of our position relative

to theory and practice, constantly confronted by the conflicting claims of theory and practice” (p. 6). For teachers, there is a contradiction between what should be and what they know to be. As a positivist construct, they can express their deficiency in reference to formal text and vocabulary but find it difficult to describe what actually was because of a lack of a professional language to define and legitimize it (Clandinin & Connelly). In their research, Clandinin and Connelly found that when teachers told the stories of their practice as expressions of their knowledge, they were portrayed as uncertain, tentative, and nonexpert, whereas if they used the vocabulary of a professional or theoretical knowledge they were seen as certain, competent, and expert.

When teachers make an effort to use this theoretical knowledge as intended, they are often thought to be unprofessional, with insufficient confidence in their practical experience to work out what action should be taken. And when, as is more commonly the case, they make it practical by personalizing theoretical knowledge for their work, they are frequently thought to be intellectually conservative and resistant to positive change. (p. 6)

Having identified the disturbance and seemingly split existence that two epistemic positions cause, Clandinin and Connelly (1995) sought to understand the differences of the action and relationship of teachers in the privacy of their own classroom with the actions and relationships they had in other professional, communal places (out of classroom). In particular, they were interested in how teachers crossed over and lived between these two professional spaces. They found that in order to manage the tensions between positivist and constructivist ways of being, teachers protected the privacy and safety of their classroom life. Their research showed that teachers manage the dilemma of implementing prescriptive

curriculum by creating *cover stories* to accommodate the difference between out-of-classroom and in-classroom descriptions, stories constructed around plot lines that fit the expectations and vocabulary of the out-of-classroom place.

In their study, Collinson and Fedoruk Cook (2004) found that even though most teachers practiced in isolation, they had a theoretical desire for professional interaction. They argue that positivist assumptions concerning autonomy and collegial dynamics prevent and discourage collegial professional dialogue and interaction. Collinson and Fedoruk Cook identify three positivist cultural norms in educational organizations that prevent individuals from sharing their individual knowledge. First, they suggest that isolation is valued by teachers because seeking professional input would suggest professional incompetence and lack of knowledge; thus, teachers are disposed to keep their classrooms private to protect themselves from the judgements and scrutiny of others. In particular, this reduces disclosure and measurement against the theoretical text (Clandinin & Connelly, 1995). Mitchell and Sackney (2009) add that a positivist value for harmony furthers isolation so that the integrity of a *culture of congeniality* is maintained. In the context of positivist ideology, most teachers are hesitant to open their educational practices and beliefs to the scrutiny of their colleagues for fear of sabotaging interpersonal congeniality. Second, Collinson and Fedoruk Cook believe that teachers hold onto the egalitarian principle where one does not impose one's view on others, an attitude which implies that there is a correct, better, or right way to practice. Evans (1996) asserts that offering unsolicited help or support is perceived as a sign of professional arrogance. Collegial respect is located in observing classroom practice as private and sacred, whereas, in a constructivist view, collegial respect and strength are positioned in the diverse knowledge that each member has available to offer. Finally, since

teachers assume that there is a cost for professional assistance, this also morally constrains individuals from sharing their knowledge and creates a perception of burden.

Collinson and Fedoruk Cook (2004) observe that teachers do not see themselves as contributors to a relational or collective knowledge and therefore do not see the purpose of communicating or sharing as a way of articulating teacher knowledge. In contrast to protecting professional autonomy by privatizing classrooms, constructivist perspective views isolation in the classroom as perpetuating secrecy and reducing access to constructs and interactions of teacher learning, therefore reducing the opportunity to engage freely and rigorously in their practice (Seely Brown & Duguid, 1991). Since individuals are limited, contextual beings who are fallible, the coherence of teacher learning and knowledge becomes clearer only when it is validated in a community of others (Thayer-Bacon, 2003). In addition, Mitchell and Sackney (2009) point out that if negotiation of curriculum is uniquely constructed and interpreted, then a moral problem also emerges.

Those teachers who retreat into their classroom are shielded from the vulnerabilities that their actions and choices have created for other members of their community, including colleagues, parents, and other students in the school. This practice is neither morally acceptable nor educationally sustainable. (p. 70)

Theoretically, privatization and teacher individualism are perceived as significant threats to the integrity of curriculum materials and the consistence with which they are translated in classroom practice (Hargreaves, 1994). In particular, privatization reduces curricular authority and accessibility for assessment and evaluation. However, positivist assumptions concerning curriculum implementation and negotiation of its meaning drive teachers to choose isolation to reduce the epistemic tensions they face. The expectations

of a positivist theory of teacher learning leave teachers emotionally perplexed as they experience but cannot articulate the paradox of theory and practice. Hargreaves asserts that isolation is an adaptive strategy that not only protects time and energy but also enfold teachers in an atmosphere of solitude. Perpetuating privatization of teacher practice is a defining implication of how teachers perceive their professional autonomy, and yet a constructivist perspective sees this quite differently.

Constructivist Constructs of Teacher Learning and Knowledge

The final section explores constructivist constructs of teacher knowledge and teacher learning, important in developing a theory of how teachers negotiate meaning of new curriculum. It is difficult to capture the essence of constructivist thinking in a theory of teacher learning without integrating conceptions of positivist ideology (Davis & Sumara, 2003). It seems that the struggle to emerge is held fast by the substance from which it has come, yet this renaissance is a natural and inevitable outcome of living. The literature presents an inadequate theory of teacher learning, but in doing so it also generates possibility: a positivist ideology that reveals its cracks and generative capacity. As teachers straddle epistemic difference, the tension they experience is the beginning of newness and self-organizing.

Knowledge Framework

To theorize how teachers negotiate meaning of new curriculum, the interaction between theoretical text and a complex living system must be understood and acknowledged. To begin with, teachers store a rich knowledge of contextual assumptions, curriculum content, classroom processes, academic tasks, and student understandings that become expressed in their being and their practice (Capra 2002;

Evans, 1996; Seely Brown & Duguid, 1991). When a new initiative or practice comes into the school, teachers do not abandon previous practices; rather they seek to discover how the novelty connects to what is already in place (Mitchell & Sackney, 2009).

Wheatley (2006) explains,

When the environment shifts and the system notices that it needs to change, it always changes in such a way that it remains consistent with itself It will choose a path into the future that it believes is congruent with who it has been. (p. 85)

The process of personal knowledge construction occurs within an existing complex mental framework of teacher knowledge or self-reference (Wheatley), one that has been established by creative energy and is an outcome of previous teacher learning (Nicolini et al., 2003). This framework is a network of collective understanding and culturally derived limits about what novelty can be noticed (Capra) and forms boundaries for ways of thinking, acting, and learning (Senge, 1990). As an organizing script, it functions to reduce the cognitive requirements necessary for negotiating and interpreting new and alternative encounters in the curriculum (Mitchell & Sackney). The framework or reference operates as a lens through which all changes, perturbations, and expectations are perceived and interpreted. As teachers negotiate meaning of new curriculum, this reference filters the innovation of the new curriculum (Ballet, Kelchtermans, & Loughran, 2006; Drake & Sherin, 2006), allowing personal prejudices and knowledge to interact with the meaning that the author of the text intended so that the text becomes meaningful (Grundy, 1987). Each decision made by a teacher in the process of

negotiating meaning is simultaneously a consequence of past actions and present context, and a condition shaping the context for future action (Lasky, 2005).

As teachers carry out their practice, this framework forms an existential matrix or mental structure, providing stability, trust, norms, expectations, and sanctions. However, situated within the structure are also channels or cracks; these gaps represent the generative learning possibilities always present in teacher knowledge. “These premises position learning in a rich context of prior personal knowledge, shared understanding, and tacit agreements, and they view knowledge gaps not as problems to be solved but as states of uncertainty that inspire learning” (Mitchell & Sackney, 2009, p. 31). As teachers negotiate meaning of the curriculum text, this dynamic framework acts to stabilize and anchor teacher learning, thus empowering teachers with a sense of competence as they engage in the instability of learning. It is a conserving force in the negotiation of meaning and is essentially linked to unstable progressive and creative forces that initiate learning, change, and risk taking. It is the framework within which the instability of creativity can be released and experienced and “serves as the foundation on which new information rests and from which new knowledge is created” (Mitchell & Sackney, p. 88).

Knowledge Cracks

Teachers are always positioned to be generative as they negotiate the meaning of new curriculum. They do not require external pressure to learn or develop but instead submit voluntarily to its uncertainty and its creative force even though they are aware that this openness requires risk (Ballet et al., 2006; Capra 2002; Mitchell & Sackney, 2009). The chaotic disturbance that initiates this growth raises both emotional and

cognitive responses (Mitchell & Sackney) and is representative of aliveness and creativity (Capra). The more fully present and aware one is to its compelling call, the more willing one steps into the experience (Blomberg, 2007). Determining what disturbances arise in curriculum negotiation is somewhat serendipitous (Scribner, 2005) as perceptual systems focus and amplify certain aspects of the curriculum and as teachers select certain distinctions in relationship to their practice and points of reference (Davis, 2004). The curriculum provides enough indeterminacy, inefficiency, chaos, disequilibrium, and disturbing qualities to catch the teacher's attention. These cracks, or holes in the curriculum in relationship to the teacher's practice, generate meaningful disturbance (creative energy), and thus a quest for new coherence (knowledge) and new understanding is initiated (Smitherman, 2005). The greater the quality and quantity of the elements in disturbance, as well as the relations between them, the greater the leverage it provides for teacher learning (Korthagen & Lagerwerf, 2001). Teachers are in a continual state of transforming knowledge to make that knowledge relevant to their context (Scribner).

Davis (2004) points out that one's perceptual system is predisposed to make distinctions and to amplify them so that it creates conceptual boundaries. Senge (1990) argues that constructing boundaries is necessary to negotiate meaning as it allows the conscious mind to "zoom in," isolate, and focus its attention on the distinctions. All learning involves interplay between the conscious and unconscious mind; initiated by emotional tension, the unconscious mind frees the conscious to focus attention on disturbance. Senge further reasons that, although there is enormous capacity at the subconscious level, the conscious mind gets easily overloaded with detail complexity.

He argues that this limiting factor forces one to invoke “simplifying heuristics” to figure things out. By reducing, isolating, and fragmenting, the process of negotiation is made more manageable.

Practice is important for meaningful interplay of conscious and unconscious, for within the practice, the unconscious reduces and focuses the cognitive energy needed to negotiate the disturbance (Senge, 1990). The practice as a disciplinary discourse sustains forms of normative behaviours, supports claims of knowledge, provides resources for normalization or order (Gherardi, 1999; Little & Horn, 2007), and is a key construct for evoking and transforming creative energy (Korthagen & Lagerwerf, 2001). Practice as an activity system is disturbance producing, and the existence of paradoxes, tensions, and incoherencies is inherent and fuels its ongoing “transformational drift” (Nicolini et al., 2003).

Knowledge Decisions

Teachers rarely carry out instructions prescribed in curriculum text. They modify and reinterpret them, responding with new versions of the original instructions to address the perceived needs and abilities of their students and the constraints on time, materials, and other resources (Drake & Sherin, 2006). Capra (2002) points out that in a managed system this can be interpreted as resistance or even sabotage, but human learning, he argues, occurs in a living system. Grundy (1987) explains that when teachers modify instructions, they interpret and respond creatively to the novelty of the text because this is the essence of meaning making. Doll (1993b) theorizes that creativity occurs in the interaction of chaos and order, a process whereby growth and previous knowledge are enfolded within each other, uniting to form a more complex and comprehensive view.

This professional discretion or autonomy reduces the authority of the text to impose its own meaning. Grundy asserts that, in a constructivist theory of teacher learning, the practitioner has the obligation to negotiate meaning of the text in the context in which the provisions of the text are applied.

To negotiate meaning of curriculum, teachers are compelled to make professional choices, which are driven by an existential desire to be a good teacher. However, personal interpretations are also subject to constraints of physical experience so that the individual is not free to construct any world but is “compelled to construe a reality that fits with the context or circumstance” (Davis, 2004, p. 121). Autonomy is maintained in a delicate balance between sufficient structure (conceptual boundaries), to limit a pool of limitless possibilities, and sufficient openness, to allow for flexible and creative responses (Davis et al., 2008). Davis et al. define conceptual boundaries as “enabling constraints,” complex unities that are simultaneously rule bound (constraining) and capable of flexible, unanticipated possibilities (enabling). Some constraints are dictated by context, others by structures of the unities, and still others arise in the coactions of agents. They are not prescriptive and have been formed in a process of free will, forming a framework from which to be enabled (Davis et al.). There is a creative partnership where learning occurs in the investigation of established knowledge while engaging in a process of establishing knowledge. The details of this partnership disclose the link between redundant and diverse constructs.

On the one hand, they act in predictable ways in varied circumstance; on the other hand, they can behave unpredictably as they transform themselves in response to new experience. Underlying their steadiness and creativity are two

complementary conditions: internal redundancy and internal diversity. (Davis et al., p. 195)

Conceptual boundaries identified in a teacher's knowledge framework can be interpreted and realized as constraining forces when teachers feel constrained and even oppressed in their ability to work freely. To safeguard autonomy, teachers develop strategies to reduce the constraining effects or they depress the creative diversity by modifying and operating more closely to stable points of internal redundancy. The perceived constraining forces can be responsible for reducing a teacher's motivation towards creativity and instability and therefore may reduce their capacity for learning. As Drake and Sherin (2006) pose, mental frameworks presuppose an institutionalized and constraining context of action, but they are not absolute, and the extent to which they are perceived as an external persuasive force depends on how they are interpreted and translated in time and space.

As teachers are confronted with disturbance, they also negotiate their tolerance for instability and tension; thus, the capacity for teacher learning is dependent on the choices made by the learner. If teachers feel safe and rested, and if they are grounded in a stable foundation, they have the necessary trust to take a risk towards a novel experience. If they feel threatened, exhausted, or oppressed, they are more likely to ignore creative disturbance and retreat to the stability of their established knowledge (Ballet et al., 2006; Capra, 2002; Mitchell & Sackney, 2009). Conserving strategies should not necessarily be interpreted as negative but rather as a discerning choice that offers a period of rest in a rhythm and relationship of teacher learning and teacher knowledge (Mitchell & Sackney, 2000). Mobilizing and directing creative energy is

dependent on the ability to relax into the uncertainty of diversity (Stronks & Blomberg, 1993). The motivation and confidence to step into uncertainty, to move away from stability, is linked to a relationship of work and rest, where rest gives the strength needed to resolve uncertainty into coherence (Doll, 1993b).

Knowledge Consolidation

After immersion in uncertainty, confusion, and doubt, the emergence of novelty and reconciliation is experienced in practice as a satisfying and delightful moment. It is a coherence that is defined by a sense of order, consistency, beauty, and harmony (Senge, 1990). This phase goes hand in hand with pedagogical consolidation and is experienced positively “if not somewhat lyrically by those who pass through it” (Huberman, 1993, p. 7). Capra (2002) describes the range of emotion, from a small sudden insight to painful exhilarating transformation, since the process is not fully analyzable with traditional ways of reasoning; there is a sense of mystery as to how reconciliation came about. Negotiating meaning can happen only when it is returned to reality, when it is experienced and embodied in practice (Senge, 1990).

Teacher learning, understood ideologically as constructivist, justifies paying attention to and honouring formal and informal teacher knowledge. Gaining access to this teacher knowledge can in part be extracted from teacher stories or narrative. Shkedi (1998) observes that teachers create curriculum stories or narratives as they explain and live out their practice. As a way of making meaning of their experience, Clandinin and Connelly (1995) argue that teachers must, of necessity, tell stories even when they are deterred by positivist values to do so.

The evidence is that teachers must, of necessity, tell stories. While teachers can be silenced by the sacred theory-practice story in its many guises, stories nevertheless bubble up because they must. It is a way, perhaps that most basic way, that humans make meaning of their experience. (Clandinin & Connelly, p. 154)

These narratives, like a mirror (Drake & Sherin, 2006), are a form of disclosing teacher knowledge and have a flexible generality that makes them adaptable and useful, bringing wisdom to constantly changing circumstances (Seely Brown & Duguid, 1991).

Their stories to live by are more than the conceptual knowledge of curriculum, teaching, subject matter and so on. They are expressions of an embodied knowledge of the landscape, of space and time, of borders, cycles, and rhythms. They express an aesthetic sense of being in the right place at the right time and of doing certain things according to satisfying temporal cycles. (Connelly & Clandinin, 1999, p. 113)

As an expression of knowledge, teacher narratives frame the way in which teachers use and interpret curriculum and dynamically consider and reconsider in a recursive manner to take into account new understandings, experiences, and insights (Drake & Sherin).

Language facilitates reconciliation for both the individual and the organization (Capra, 2002). Language is not merely a description; it is a shared environment that draws in the relational capacity for learning and meaning making (Nicolini et al., 2003) and brings to action a transformation of belief into words. Jaworski (1998) captures Varela's essence of language as a constructivist theory of learning.

Language is like another set of eyes and hands for the nervous system, through which we coordinate actions with others. We exist in language. It is by

linguaging and recurrent actions or human practices that we create meaning together . . . it is through language that we *create* the world, because it's nothing until we describe it. And when we describe it, we create distinctions that govern our actions. To put it another way, we do not describe the world we see, but we see the world we describe. (pp. 177–178)

Jaworski explains that, although reconciliation is an individual experience in negotiating meaning, it is inextricably linked to a network of actions and languaging that goes far beyond the individual. He asserts that, although it is an individual who makes the request or promise of declaration, it is not ultimately individual because it is coming from and inserted into the whole background and history of human practices. In this way, reconciliation enables learners to become observers in their own theatre (Senge, 1990) and once again become aware of the possibilities and cracks that lie within and a sense that the work of teaching is never done, that there is always more (Hargreaves, 1994).

Communities of Practice

Davis (2004) asserts that the process of teacher learning prohibits any identical interpretation. Yet at the same time there is a sense that teachers function in a shared enterprise, a common practice where it is acknowledged that there is a legitimate way of doing things, of relating to one another, a bond that, in spite of privatization, teachers feel compelled to in a greater community of practice (Capra, 2002; Senge, 1990). Gherardi (2008) explains that the intersubjectivity of the participants achieves a relational phenomenon that gives rise to shared meaning.

They are simultaneously aware that they have a sufficient degree of access to the perceptions of others to be able to perform their normal everyday activities. From

this point of view, the meanings of our experiences of the outside world are considered for all practical purposes to be ‘empirically identical’ and thus give rise to the shared meanings indispensable for communication and for that particular ‘accent’ of reality conferred upon the world of everyday life. (pp. 518–519)

Wheatley (2006) asserts that as individuals learn, an entire network is engaged together in reorganizing itself. When the individual is changed, the change affects the network in which he or she is situated. Even though negotiating meaning is an individual process, knowledge is lived or actualized far beyond its initial starting point; it is networked and felt beyond time and space (Bohm, 1996). As a network of communication and language, each communication creates thoughts and meaning that give rise to further communications, actualizing a learning community that is self-generating (Capra, 2002). Culture emerges from a network of communications among individuals, and it produces boundaries of meaning that have implications for action. The social structures that guide or constrain individual actions are produced and continually reinforced by their networks of communication (Capra). This common practice becomes a recognizable bond and compels participants to be networked in a way to achieve an overall vision or purpose (Capra).

Chapter Summary

To develop a theory of how teachers negotiate meaning of curriculum, the literature in Chapter Two addressed aspects of teacher learning and teacher knowledge. The chapter began with an historical analysis of epistemology to contextualize a discussion of positivist and constructivist theories of knowing. This epistemic discourse was then related to the development of curriculum theory and teacher practice. Recognizing that a conceptual divergence exists between a predominant positivist

perspective of teacher learning and teacher knowledge and a constructivist perspective, the question of the coherence of constructivist constructs in teacher practice was an important consideration in understanding how teachers negotiate meaning of curriculum. Using the literature, the final section identified constructivist constructs important to teacher learning and teacher knowledge. The discussion of these constructs provided a framework from which to conceptualize a theory of how teachers negotiate meaning of new curriculum.

CHAPTER THREE: METHODOLOGY

This chapter describes the research methodology used to study how teachers negotiate meaning in curriculum. Schram (2003) asserts that the way researchers choose to proceed reflects their natural and acquired predispositions; it discloses epistemic assumptions, reveals ontological orientation, and uses methodology that aligns itself with the metaphysics that drives the inquiry. A researcher's commitment to associate with a particular research approach reflects the potential that one believes can be gained from that methodology. This study was focussed on conceptualizing the experience of negotiating meaning from an interpretive perspective. By using qualitative methods that examined the lives of teachers in practice, the research focussed on social action that had been initiated and motivated by the theoretical constructs accessible in curriculum documents. A grounded theory design was the qualitative procedure used to collect and analyze the data. The chapter explains the methodology and methods used to conduct the research. It describes site and participant selection, the process of data collection and data analysis, as well as articulating methodological parameters, credibility, and ethical considerations.

Interpretive Approach to Research

Esterberg (2002) explains that an interpretive approach to research aligns with epistemic assumptions that humans attend or act toward things based on the meaning those things have for them; meanings of things arise out of social interaction and practice; and meaning or knowledge is created through a process of interpretation. This implies that inquiring about teacher practice as it relates to curriculum implementation is of a personal, subjective nature that yields data and results that are unique to each participant. In a natural context, the research emphasis is on understanding how individuals negotiate

and interpret social reality so that knowledge about curriculum is constructed. The main research task is to interpret and understand those constructions from the point of view of those who live in it. As an interpretive study, it was assumed that understanding the process of negotiating meaning in curriculum materials must be researched in the social context from which knowledge construction arose. It is from this philosophic perspective that the question of curriculum theory and practice is understood.

The purpose of the study was to develop a theory of how teachers negotiate meaning of new curriculum. Even though drawing data from social situations contains a great deal of ambiguity, Neuman (1997) asserts that the value of an interpretive approach gives the reader a feel for another's social reality by revealing the meanings, values, interpretive schemes, and rules of living used by people in their daily practice. In this way, it provides a conceptualization or a set of beliefs whereby people are able to categorize and organize the flow of the process they experience. An interpretive approach makes it impossible to discover straightforward, objective facts; however, a theoretical framework is accurate if it makes sense to those being studied and if it allows others to understand deeply or enter the reality of those being studied.

Qualitative Research

To study how the participants negotiated meaning of new curriculum in the context of their practice, qualitative methods were used. According to Creswell (2002), the purpose of qualitative research is to examine a research problem in which the inquirer wishes to explore and understand a central phenomenon. The central phenomenon in this study was how teachers negotiate meaning of new curriculum. Information was drawn from the participants by asking general questions about the experience of curriculum

implementation as it was negotiated at its various stages. The data collection was conducted during the period of time when the participants were negotiating meaning of new curriculum documents. Neuman (1997) emphasizes the importance of social context in qualitative research and asserts that when context is ignored, social meaning and significance are distorted. A qualitative approach was taken in this study to interpret the phenomenon of negotiating meaning in the context in which it took place.

Esterberg (2002) asserts that qualitative researchers pay attention to the subjective nature of human life, not only the subjective experiences of those they are studying but also the subjectivity of the researchers themselves. As researchers try to understand the meaning of social events for those who are involved in them, they also try to understand the researchers' own perspective. Neuman (1997) points out that a qualitative researcher's firsthand knowledge of events, people, and situations raises questions of bias, but it also provides a sense of immediacy, direct contact, and intimate knowledge. The human factor does not mean that a qualitative researcher arbitrarily interjects personal opinions or selects evidence to support personal prejudices. A researcher's presence is always an explicit issue, and personal insight, feelings, and perspective can therefore be used as leverage in the research. In this study, I acknowledge that my own perspective and meaning are grounded in my personal experience and context. I sought to learn from the experiences and perspectives of others and thus temporarily suspended my own judgments and preconceptions about what I perceived to be real. However, as a researcher I assumed that, as I gathered data that described teachers' experiences, I could bring forward only an interpretation of that description.

The research design used to theorize how teachers negotiated meaning of new curriculum was grounded theory. As defined by Neuman (1997), grounded theory design is a qualitative research method that uses a systematic set of procedures (collecting data, identifying categories, connecting these categories, and framing a theory that explains the process) to develop inductively derived theory about a process such as negotiating meaning. Theorizing begins during data collection and emerges and evolves over the set of procedures. The theory of how teachers negotiate meaning of new curriculum was inductively grounded in the data or the empirical evidence. Creswell (2002) adds that it is a “qualitative procedure used to generate a theory that explains, at a broad conceptual level, a process, an action, or interaction about a substantive topic” (p. 439). By keeping the qualitative research flexible, researchers allow the data and theory to interact and therefore provide a method for discovering and generating a new theory.

According to Creswell (2002), a good grounded theory must meet four central criteria: It must fit the reality of the participants and researcher, it must work by having the capacity to explain variations in the behaviour of the participants, it must assert relevance (it must fit and work), and it must be modifiable when new data are presented. Creswell argues that grounded theory has the potential to provide a better explanation of the process because it fits the situation and actually works in practice. Grounded theory is sensitive to the individuals in a setting and includes the complexities actually inherent in the process.

Site and Participant Selection

Creswell (2002) explains that the intent of qualitative research is not to generalize to a population but rather to develop an in-depth exploration of a central phenomenon.

For this reason the qualitative researcher purposefully or intentionally selects participants and the site of study. Esterberg (2002) adds that qualitative researchers usually choose research participants for specific qualities they can bring to the study. Creswell defines this as purposeful sampling, where the criteria for selection are those that best position the researcher to understand the central phenomenon.

The teachers selected for this study were teaching in a faith-based independent school system. They were professionally experienced with 4 or more years of practice in the classroom. This professional experience brought a broader and comparative knowledge to better focus the dialogue on the process of curriculum delivery. The teachers selected were implementing newly developed curriculum materials for the first time.

As a way to investigate how teachers negotiate meaning in implementing curriculum, *Creation Studies* curriculum was used as the initial entry point into the study. The newest development of this curriculum was the social studies program (Appendix A) in grades 4 through 6, which provided materials that would be new to a greater number of teachers. Approximately 175 junior teachers across the province were involved in this curriculum initiative. Once 5 participants agreed to participate, it was found that 1 of the participants was implementing a grade 3 (primary) *Creation Studies* social studies unit, material that had been developed prior to the junior grades series. Since the unit was being implemented for the first time by the participant, it met the criteria for the study and therefore the participant remained in the study.

The *Creation Studies* curriculum is mostly unique to the independent school sector, so one such school system was chosen as the site for the study. My position as a

Creation Studies science curriculum writer in the independent school system enabled me to have access to all the provincially based schools and their teachers. As Esterberg (2002) asserts, gaining trust and developing relationships with the participants is an important facet of the research method. I have been conscious that, as I entered into this research, I was entering into a relationship with the participants. My professional contacts with teachers in various school communities were built through workshop days, piloting of curriculum drafts, and school visits. Teachers knew me as a legitimate member of the community, developing, promoting, and taking part in the implementation phase of curriculum development. Tilley (1998) describes this relationship as being “someone familiar” (p. 316) in the professional community. My professional network enabled me to have knowledge and contact with the potential participants, but the research remained separate from my professional role.

Once ethics clearance from Brock University was obtained for the research, several teachers from various schools in southern Ontario were invited to participate, first through personal contact and then more formally through a written letter of invitation and consent form. Teachers were invited individually until 5 consented to participate. The 5 original participants who consented to participate in the research completed the study.

To further enhance the separation between research and system activities as well as to protect confidentiality for participants, the selected teachers were to be employed at different schools. Two of the participants, however, were employed by the same school. After hearing about the study from a colleague who had been approached to participate, another teacher in the same school indicated an interest in the research and requested to be considered. After consulting the participant who had been approached first, the second

teacher was invited to participate through a written letter. Both teachers consented to be involved in the study. At the onset of the study, these 2 participants saw an opportunity to co-ordinate professionally and to talk together about their involvement in the study. However, this did not happen, and each participant remained independent. Even though they were aware of each other's participation, they did not participate together in any aspect of the study.

Once participants agreed to participate, they were personally contacted to arrange a meeting date and were invited to meet for research activities in locations outside of the school. All of the participants indicated their preference to conduct the interviews in their school building. Except for 1 participant, all of the interviews took place in the classroom of the participant. In this way, they had access to teaching materials that they considered relevant to the study. They referred to bulletin boards, curriculum materials, and student products as a way of describing their teaching experience.

Data Collection

The type of data that would best answer the research questions was aligned with the research methodology. Esterberg (2002) explains that, in an interpretive study, meaning arises out of social interaction and is created through a process of interpretation. Schram (2003) adds that this process focusses the data collection on descriptive text from the participants who lived the experience. The focus of this study was to extract descriptive text from teachers who lived the experience of negotiating meaning of curriculum in their practice. This kind of text was generated from two semistructured interviews conducted with the participants. The interview questions constructed for the first interview (Appendix B) drew out dialogue concerning teaching philosophy,

descriptions of how the new unit would be approached, the feelings the participants anticipated in implementation, and their perceptions of potential outcome of the unit. The second interview was conducted near the end of implementing the new curriculum. The questions (Appendix C) asked the participants to identify and share particular experiences that were remembered as highlights and/or challenges as they negotiated meaning. The second interview also directed attention to the decisions and choices the participants had made over the course of implementing the curriculum material and guided them to a discussion of why those decisions were made. The questions in both interviews were constructed to be open-ended so that the participants would feel free to discuss specific individual experiences in their practice.

Semistructured interviews provided the tool to collect qualitative data about the participants' perspectives on the curriculum implementation experience. Interview questions were sent to the participants at least 48 hours in advance of the scheduled interview. In keeping with Esterberg's (2002) conception of what interviews represent in an interpretive approach, I saw interviewing as a form of relationship between the interviewer and the interviewee. As Esterberg describes,

The individuals may be close or, perhaps more typically, distant. The interview may be prolonged, repeated over time, or very brief. In each case, however, two individuals come together to try to create meaning about a particular topic. While participating in this relationship, they also draw on established social conventions. For example, questions and answers follow one another, with individuals taking turns speaking and observing rules for finishing conversations. In most

interviews, one person does most of the questioning, with the focus on the person being interviewed. (p. 85)

The interview achieved a relational space to negotiate and create meaning together when, as the interviewer, I noticed particular distinctions that arose in the discussion and articulated them as a potential vantage point for the participant to consider. My experience resonates with Esterberg's analogy of a process that resembles a dance, in which one partner (the interviewer) must be carefully attuned to the other's movements. She adds, "Because the interviews are not prescribed, they can sometimes take surprising turns" (p. 87). The potential for meaning is created within the flow of the interview as opposed to the positivist assumption that the interview holds a store of knowledge. The direction of the conversation was at times intuitively driven but always drawn back to the interview questions that guided the data collection.

Constructing interviews in this sense also requires the researcher to consider how much of the self should be presented in the dialogue. Esterberg (2002) asserts that there are a variety of practices concerning this issue in qualitative research: Some researchers believe that the exchange should be more like a normal conversation, with interviewer and interviewee both participating in the dialogue, whereas other researchers feel that the emphasis should remain firmly on the research subjects. As a novice, I attempted to play a neutral role, tailoring my presentation of self to the research situation. My own experience as a teacher implementing curriculum deductively informed the kinds of questions posed in the interview, but I tried not to share my own experiences in the dialogue.

The first interview conducted with the participants provided a foundational framework of curriculum dialogue from which both the participant and the researcher became more aware of the purpose of the study. With the first interview as a preface, participants were prepared to extend their professional dialogue of curriculum issues in the second interview. Creswell (2002) and Esterberg (2002) assert that in qualitative research, data analysis begins and is simultaneous with the process of data collection. The second interview takes the initial analysis and reflection of the first interview and incorporates an emerging process to further the data. Following up with a second interview gave both the interviewer and the interviewee time to reflect on the meaning constructed in the first interview and allowed the researcher to ask questions that arose out of the analysis of the data from the first interview. As I conducted the second interview, I kept in mind some of the discussion that had arisen in the first interview and brought it into the conversation of the second interview. In this way, the first interview was relevant and connected to the second and could be used to draw the data towards a theory of process.

Several secondary data sources were collected to enrich the interview data. Prior to the interviews, the participants were asked to voluntarily complete a participant background survey (Appendix D). This survey served as a starting point for the first interview and provided basic information about the participant's educational background, career experiences, and personal interests.

Creation Studies curricular documents were examined during the process of the interviews. I quickly flipped through the *Creation Studies* materials being used by the participants, looked at general overviews, and read portions of lessons. In this way I had a

sense of what the unit was about and what instructional strategies were used. Reviewing the particular unit from the *Creation Studies* curriculum prior to the first interview provided a familiarity and reference point for the researcher. Since I was familiar with the curriculum materials, the participants could speak more deeply about their interpretation of the unit and their work rather than taking time to explain what the unit was about and how it was designed. The individual *Creation Studies* curriculum binders were purchased for the participants for their personal use and ownership. One of the unique features of the *Creation Studies* curriculum was an open right-hand margin which was intended for teachers to reflect, plan, and jot notes. In the first interview, the participants were encouraged to journal their experience and track the movement from the text to the classroom practice. All of the participants did write in the margins during the implementation phase and referred to their notes during the second interview. The participants were invited to submit these documents as additional data for analysis. The participants were all willing to share this resource, and upon completion of the study, the manuals were returned.

Field notes were written throughout the study period. This strategy helped me to manage and organize various facets of the study. It also enabled me to articulate a personal representation of events, thoughts, and reflections centering on the interview experience and the data analysis that followed. I used a notebook during interviews, immediately following interviews, and while listening to and transcribing interviews. These notes were both descriptive and reflective and recorded a description of the interview and personal thoughts that related to insights or themes that emerged during or after the interview process. They also included further questions that came to mind. In

this way, the field notes were directly related to the various stages of the interview process and were useful in developing categories related to the participants' experience. During data analysis, field notes were also written to keep track of ideas and logic that arose from the experience.

Data Analysis

Qualitative analysis was conducted on the collected data from interviews and curriculum documents. Esterberg (2002) asserts that in qualitative research, data analysis is a process of making meaning; it is a creative process. This is not to say that all meaning is embedded in the data and needs uncovering; rather the process of analysis is to actively create meaning out of the raw material that has been collected. Coffey and Atkinson (1996) add that the goal of qualitative analysis is to focus on the potential meanings of the data. They suggest three basic procedures: first, noticing relevant phenomena; second, collecting those phenomena; and third, analyzing those phenomena in order to find commonalities, differences, patterns, and structures. Since there was no single "right" way to organize and analyze the data (Esterberg), the purpose of the study continuously guided the process of analysis.

Recorded interviews were transcribed and then coded for analysis. Tilley and Powick (2002) assert that transcripts, although twice removed from the original interview dialogue, are representative of the empirical data central to analysis. They contend that transcribing in an interpretive study is in fact an interpretive act and not merely a mechanical chore. They argue that it is a positivist assumption to view transcription as simply a matter of transferring authoritative texts that hold certain truth. It is also a positivist assumption to believe that the person transcribing the texts maintains an

objective stance. As I became immersed in the collection of data, I became aware of its interpretive value and realized that the data must be carefully and respectfully handled to avoid loss or exaggeration. Tilley (1998) asserts that it is especially difficult to actively respect what we do not know or understand. I realized that my own deeply embedded assumptions, lack of knowledge, and misinformation were capable of controlling what was told and what remained unearthed. With this in mind, I decided to become directly invested in the transcription process by listening and “putting the words on paper” myself. In this way, the transcriptions became a further extension of the interview experience and a stronger link to the analysis process.

While I transcribed the interviews, I also wrote in my research journal, reflecting and responding to the interviews. I found that my freedom to stop, rewind, review, and play the recording enabled me to think more deeply about the interview. Before transcribing, I listened to each recording immediately following the interview. I listened again as I transcribed the recorded data to text. Once it was transcribed, I listened to the entire recorded interview while reading the constructed transcript and made corrections where necessary. The transcription process provided further and prolonged engagement in the data. In addition, transcribing the interviews in this way secured data access to me and the participant and therefore further ensured confidentiality.

After the second interview, participants submitted their curriculum binders for the purpose of data collection. The participants’ journal notes in the binders were used to further the data of the interviews. When the binders were submitted, I read through the participant text and summarized these data separately for each participant. Since the participants had discussed the role of journaling in their experience and had used their

binder as reference in the second interview, the data extracted from the curriculum binders were merged into the interview data.

The next step was to organize the bulk of the data into descriptive categories. Esterberg (2002) points out that the volume of data makes this a substantive and iterative process and can initially add more complexity to the analysis process. Guided by procedures described by Esterberg and Creswell (2002), I read a paper copy of the transcripts line by line and identified several general categories that seemed to be relevant. I summarized and clustered similar categories and attached a colour tag to each. I then reread the transcripts, highlighted the text with these colours, and used a computer to move data bits from the interviews into each category. For example, I found that all of the participants discussed the modifications they had made from the curricular texts. This generated one category which I labelled, “adapting or changing the curriculum unit.” I highlighted these bits of data in pink and gathered them together. Within this category, I also further distinguished when the participants spoke of “reducing” the curriculum, when they “added” their own features to the curriculum, and when they “adapted” the ideas from the curriculum. I organized these concepts in subcategories. Using the categories and condensing them into analyzable units, I then summarized the data from the interviews and sent these summaries to the participants for verification. Coffey and Atkinson (1996) call this process “coding” to generate concepts from and with the data. Coding is part of the process, but it is not the analysis itself. It is a descriptive way to organize the data. In this manner, the researcher can identify and reconfigure the data, allowing them to be thought about in new and different ways (Coffey & Atkinson).

Coffey and Atkinson (1996) describe codes as heuristic tools, pieces to think with. Codes link different segments or instances with the data; they bring fragments together with some common property. Like Coffey and Atkinson, Merz (2002) describes this inductive approach as using inquiry as a hermeneutical process. Citing Brown (1997), she explains, "Hermeneutical understanding never arrives at its object directly; one's approach is always conditioned by the interpretations explored on the way" (p. 149). It is always open to possibilities and surprises. Coffey and Atkinson add, "Coding need not be viewed simply as reducing data to some general, common denominator. Rather, it can be used to expand, transform, and reconceptualize data, opening up more diverse analytical possibilities" (p. 29).

Once I had established a number of codes, I cut copies of the transcripts and summaries into strips, each segment marked with a code and relevant data bits. Multiple times, I sorted the slips into piles to see what themes seemed to emerge, each time keeping track of the outcome. For example, by linking together the codes of curriculum addition, adaptation, and reduction, I realized that this spoke to a theme of autonomy, where teachers used their discretion in negotiating meaning. In a cross-case analysis, I was looking for patterns, commonalities, and differences in how the participants negotiated the new curriculum materials. As I was conducting data analysis, I was also recursively thinking about the literature and my own experience to help sort out the meaning in the data. I found it helpful to talk about the developing analysis with my advisor, colleagues, and fellow students. These discussions helped me to clarify the codes that had emerged and stimulated new ways of thinking. After working through several stages of coding and analyzing, themes emerged as the relationship of codes became

apparent. The data were shifted several times using various thematic ideas that arose through the categories. Creswell and Miller (2000) explain that this process is one where qualitative analysts return to their data over and over again to see if the constructs, categories, explanations, and interpretations make sense.

Whereas codes and categories stick close to the data, themes are ideas that lie beneath the coding and categories and are more theoretical (Coffey & Atkinson, 1996). Themes have the potential for cross-case analysis because they are more abstract and theoretical. Merz (2002) points out that the purpose is to take the empirical evidence in the data, however unique, and draw it into coherent ideas or essences. The analytical process achieves a collective coherence and an interpretation of the data collected. It was at this point in the analysis that I realized the limitations the initial proposed conceptual framework held for theorizing how teachers negotiated meaning of new curriculum. The research began with three central tenets to explain how teachers negotiate meaning: epistemology, curriculum design, and experience in practice. The research yielded a much more comprehensive view and provided a theoretical framework that brought the experience of participants together and theorized how teachers experience theoretical constructs and transfer them into practice. In keeping with the purpose of the study, which was to develop a theory of process to understand how teachers negotiate meaning of new curriculum, four points of negotiation or themes arose from this analytical process.

As these points of negotiation became more evident, the experiential nature of the process also evoked particular emotions that became constructive as an analytical tool to check the movement of the data. Before realizing the emotional attributes, I had loosely

clustered the codes in four themes that seemed relevant in how meaning of curriculum was constructed. As I began to review and conceptualize the relationship these themes had in developing a theory, I was struck by the emotional qualities of each theme and found it useful in determining whether the data had been appropriately positioned. This was a recursive and robust process as the points of negotiation emerged more clearly defined. Aspects of emotion were found in the details of the conversation, the way they were said, the words that were used. As I reflected on the direct quotes drawn from the transcripts, I remembered noticing behavioural responses such as body language and tone of voice (hesitation, emphasis, and eagerness). The participants' language and behaviour during the interviews evoked feelings of trust, confidence, tension, anxiety, creativity, inspiration, satisfaction, and delight. After the interviews, I also recalled speaking of these emotions in various conversations with my advisor, colleagues, and fellow students. These emotions were brought together by the four themes that emerged through data analysis and became an important facet of tracking the process of negotiating meaning.

Trust characterized *points of reference* as participants narrated a practice grounded in previous professional experience, teaching philosophy, professional assumptions, and institutional protocols and mechanisms. Trust was evident in the clarity and emphasis in which the participants articulated their teaching philosophy and their professional assumptions. Points of reference were distinct in language and represented a "stable truth" for the participant. As a conceptual boundary, they also provided a structure that was identifiable and tangible to the participant. Points of reference gave the participants the confidence that in spite of the unknowns in new curriculum materials, they would be able to negotiate meaning and apply it to their practice.

Tension was described by the participants as they anticipated confronting new curriculum documents in a *point of growth*. As they anticipated how the aspects of the curriculum documents would be experienced in their practice, the participants expressed varying levels of hesitation, anxiety, and tension. This emotion was particularly evident in the first interview before the participants had begun the process of negotiating the curriculum into their practice. The participants articulated particular issues or conceptual distinctions that presented a disturbance or challenge for them. Within these distinctions, the participants encountered the generative gaps or unknowns into which they could choose to step. The curriculum materials provided a spark or potential energy to engage in professional learning.

As the participants grappled with the meaning of the new curricular materials, tension shifted to *creativity* as they began to make decisions about how they would negotiate the new materials. As a *point of autonomy*, negotiating meaning was a matter of interpretation and choice. The participants spoke of the potential creativity inherent in the curriculum documents. Viewing the materials as more than they could possibly negotiate, they were inspired by making choices, by applying professional discretion to the negotiation process. For these participants, professional discretion was a natural part of negotiating meaning; it freed them to rationalize the choices they made.

As the experience of practice became a reality, the participants expressed *delight* in its achievement. Delight was representative as a *point of reconciliation*, reflective of the meaning that participants had made in negotiating new curriculum from theory into practice. Reconciliation was particularly evident in the second interview. The participants were excited and eager to tell me of what they had achieved in their practice and their

success in negotiating challenging aspects of the new curriculum. Their faces expressed delight; their conversations were fast, and they were eager to share their experience.

Methodological Parameters

The results of this study are limited and do not have privileged authority over other interpretations. As an interpretive study, the intent was not to establish a cause and effect theory about curriculum development and implementation but rather to form a coherent framework for thinking about how teachers negotiate meaning of curricular documents. In an inductive exploration, identifying themes from the data does not assume that all themes or layers are exposed. The interpretations made are relational to context and time and are therefore limited. Each research strategy brings to the surface different elements that require and deserve their own attention—it is assumed that other strategies are useful and would provide other insights into the research problem.

No firsthand observation was conducted of the participants working in their schools, implementing *Creation Studies* curriculum. Such observation might have provided additional interesting data, but the particular focus of this study was to understand teachers' perspectives on curriculum delivery and how they negotiate meaning of the curriculum. The interviews with teachers were limited to what the teachers thought about their practice; the study did not assess what actually happened in the classroom.

Curriculum development and publishing in a small independent educational system differs from other curriculum development in that it is not controlled by large school boards, powerful teachers' unions, and policy documents set by the Ontario Ministry of Education. Even though this system pays attention to the Ministry's

curriculum policies, the policies themselves are interpreted with flexibility and have the potential to be reconceptualized to better meet the aims and goals of the school system. This context diverts attention away from specific, external parameters and allows curriculum developers to have more creative license and freedom. This unique setting for curriculum development may also represent limitations in a theory of how teachers negotiate meaning of that curriculum.

Establishing Credibility

Creswell and Miller (2000) assert that research credibility is concerned with how accurately the study represents participants' realities of the social phenomena being studied. According to Neuman (1997), qualitative researchers develop checks on their evidence to ensure that their research accurately reflects the evidence and is trustworthy. One such check was to establish that an appropriate amount of data was extracted from the study to theorize how teachers negotiate meaning in curriculum. According to Creswell (2002), data drawn from in-depth interviews situated in three to five case studies provides the potential description and narrative necessary for a qualitative study. Five participants volunteered for the study and were interviewed twice, once at the onset of implementing new curriculum and once again at the conclusion of the process. The second interview provided verification of what was said in the first interview and therefore increased the trustworthiness of the data.

The transcriptions themselves were presumed to be representative of the empirical data, and thus establishing credibility in translation was an important consideration. Teeuwsen (2006) explains that in transcribing each interview himself he did not leave any interpretation to another person and found this exercise to be a more ethical and accurate

approach to data analysis. I conducted and transcribed each of the interviews in this study, assuming that having firsthand knowledge better enabled me to present and interpret the findings of the study.

Creswell and Miller (2000) assert that in interpretive research, it is assumed that reality is socially constructed and it is what the participants perceive it to be. This suggests the importance of checking how accurately participants' realities have been represented. After each interview, the interview transcript, a feedback letter, and any relevant notes were sent to the participants, who were asked to check and verify the accuracy of the data collected from the interviews. In the study each participant was sent three sets of data: one following the first interview, a second following the second interview, and finally a summary of all the data collected from the participant. Confirmation and verification of the documents were requested of the participants. Some minor additions or changes were made and incorporated as data. As a method to establish credibility, the participants checked and verified the data. Creswell (2002) defines this process as "member checking," where the researcher asks the participants in the study to check the accuracy of the account. Neuman (1997) adds that active participation and consultation of the participants provides a "cross check" (p. 333) that the reconstructions and interpretations of the researcher are trustworthy.

Morse, Barrett, Mayan, Olson, and Spiers (2002) define verification as the process of checking, confirming, making sure, and being certain. They explain that in qualitative research, verification refers to mechanisms used during the process of research to incrementally contribute to ensuring reliability and validity of the study. Morse et al. assert that these mechanisms are woven into every step of the inquiry.

In other words, qualitative research is iterative rather than linear, so that a good qualitative researcher moves back and forth between design and implementation to ensure congruence among question formulation, literature, recruitment, data collection strategies, and analysis. Data are systematically checked, focus is maintained, and the fit of data and the conceptual work of analysis and interpretation are monitored and confirmed constantly. (p. 17)

They add that the credibility of qualitative research is only as good as the responsiveness of the investigator. It is essential that throughout the research inquiry, the investigator remain open, use sensitivity, creativity, and insight, and be willing to relinquish any ideas that are poorly supported. They assert that these investigator qualities contribute to credible qualitative research. These qualities have been central to the work of this project. The time spent in personally listening to interviews, relistening, and transcribing the data recorded on audiotapes, as well as the generation of a great volume of detailed written notes from literature reviews and reflections, were the outcome of many hours of investigator work. Throughout the long process, I was cognizant of the back and forth nature between design and implementation, between question formulation and collection strategies, between literature and data. The iterative inquiry process was essential to an emergent theory development.

Ethical Considerations

This study was conducted according to the requirements for conducting ethical research with human participants as established by the Brock University Research Ethics Review Board. After completing my proposal, I submitted the required documentation to

the Research Ethics Review Board and received ethical clearance (Appendix E) to conduct my investigation.

The issue of confidentiality was addressed by way of informed consent. As a matter of ethical consideration, the anonymity of the participants was protected by assigning pseudonyms (Sara, Helena, Nick, Dave, and Jenna). Access to the data collected from the participants was made available only to me and my advisor. In this way the information was kept confidential and anonymous.

Prior to the interviews, each participant was informed of the purpose of the study as well the potential use of the results. That is, participants were made aware that the research was a component of a Master of Education program at Brock University but also that it would be used to better inform and understand my role as a curriculum writer. Since the participants were aware that I was a curriculum developer and writer within their own school system, it was important that I disclose that position to them. Tilley (1998) asserts that this position can be interpreted as a power construct and has the potential to influence the responses of the participants. This influence may be an advantage if participants feel free to share their experiences for the purposes of adding their voice to curriculum development, but it could also prove to be a difficulty if a participant feels less free for fear of offending not only the writer but also the organization in which the writing is set. Providing an atmosphere of trust and goodwill as well as confidentiality was important. The subject matter of the research was such that it did not bring negative backlash from colleagues or the school organization.

All participants were asked to give their voluntary consent to participate and were made aware that they could refuse to participate in the study and that they could withdraw

at any time without penalty. They also were made aware that they could choose to decline to answer any questions in the interviews. By participating in the study, there were no institutional obligations, expectations, rewards, or risks associated with the research project.

According to Tilley (1998), the personal interview is a particular locus for ethical issues. Once the text has been disclosed by the participant in the interview, it becomes the burden of the researcher in deciding how to present and interpret the information. The researcher decides how participants are represented in the written documents, and it is this presentation that will shape how participants are viewed by the reader. Representing data in this way presents itself as a dilemma as the researcher grapples to reconstruct and critically re-present the voices of others. The limitations of what is revealed and what is left buried are always an ethical concern (Tilley). As a researcher I experienced tension in writing and submitting the summaries for each participant. I felt accountable to represent each participant in a positive perspective, not judging how they had negotiated meaning of the new curriculum but rather appreciating their experience and interpretation of the new curriculum. Participants received copies of transcripts from their interviews, field notes, and summaries relating to their interviews. The feedback from the participants' check was always positive and encouraging, which gave me a sense that I had honoured their narrative and interpretations.

A significant ethical consideration was the entanglement of my institutional and research position in this study. Esterberg (2002) poses this dilemma by asking: Who are you in relation to this site? What do you already know about this place? What kinds of stereotypes might you have about the place and the people in it? Does the setting have

any personal meanings for you? Does it evoke any particular emotions or feelings? I have been professionally involved with this school system for more than 25 years, and I have a great deal of meaning invested in the experiences I have had over that time period.

Although this involvement can be an advantage, it can also bring to the research a certain amount of unconscious bias. Esterberg advises that researchers should be careful to distinguish their own feelings about the setting from those that the participants themselves have. Even though I cannot emotionally separate myself from my institutional position, I attempted to work within a framework whereby those emotions and biases were reduced. Institutional bias was reduced by situating the study in a particular curriculum rather than an institution. In this way the purpose of the study remained focussed on understanding how teachers negotiate meaning of curriculum.

Chapter Summary

Chapter Three has described the research methodology used to study how teachers negotiate meaning of curriculum. Neuman (1997) points out that “qualitative researchers do not assume there is a single view of reality, but believe that different methods reveal different perspectives” (p. 336). This study conceptualized the experience of negotiating meaning from an interpretive perspective. Using a grounded theory design, qualitative methods were used to examine the lives of teachers in practice. By collecting data from teacher narratives while they were engaged in the process of implementing new curriculum, their social reality was researched. In this way knowledge was constructed to develop a theory of how teachers negotiate meaning of new curriculum.

CHAPTER FOUR: RESULTS OF THE STUDY

The purpose of the study was to theorize from an interpretive perspective how teachers negotiated meaning of new curriculum. Using qualitative methods, 5 experienced teachers from an independent elementary school system were interviewed at the onset of implementing new curriculum materials and then again at the conclusion (approximately 6 weeks). The interviews were semistructured, which enabled participants to feel free to discuss specific individual experiences in their practice. All of the participants were implementing a new social studies curriculum developed in units that had been designed as a series entitled, *Creation Studies*. Data for the study were collected from interviews, the participants' journals, and related curriculum documents.

The interviews were transcribed and the transcripts returned to the participants to verify for accuracy. In addition, summaries of the interviews were constructed and also verified by participants. Data were then organized into descriptive categories to generate concepts. With the refining of categories, themes emerged that were used for cross-case analysis. Four points of negotiation or constructs arose out of this analytical process and provided a theoretical framework to describe how the participants negotiated meaning of the new curriculum. These four constructs (reference, growth, autonomy, and reconciliation) serve as the framework through which the data will be presented in this chapter.

Points of Reference

As I reviewed the data from the interviews, I found that the participants did not begin the process of negotiating new curriculum in a void or vacuum. They had at hand many points of reference from which they could begin this negotiation. These anchor points had been reconciled in past experiences, and they provided a sense of trust and

sensibility that furthered confidence, motivation, and the professional ability to negotiate new curriculum in a meaningful way. In the interviews, as the participants discussed their experience of negotiating new curriculum, they also had opportunity to articulate some of their beliefs, ideas, assumptions, and knowledge about teaching. This discussion brought to the surface a number of stabilizing factors that would influence how they would approach and negotiate new curriculum. In this professional narrative, several points of reference were identified: philosophy of teaching, curricular knowledge and literacy, professional assumptions about teaching and learning, and understanding of cultural norms situated in classrooms and schools.

Teaching Philosophy

The participants articulated some overarching professional goals that were central to being a good teacher, and this vision of teaching, developed through their teaching experience, was integral to the negotiation of new curriculum. As an example, Sara discussed how her focus to be clear and thorough as a teacher directed how she would negotiate new curriculum, because this was what made her a good teacher.

For me as a teacher, I am a very clear and thorough person, and so it's very important to me when I teach that the learning expectations are very clear as well.

(Sara #1, p. 1)

I always appreciated teachers and professors who made sure the material was concrete. I knew what was expected of me, and I know that students appreciate that too. Within that you can be creative and you can expand on things, but I think that making sure they understand what I expect of them in class and what to know on tests and assignments is central. I always appreciated when my teachers were

very clear because then I knew this was what was expected and what I needed to study. (Sara #1, p. 3)

In practice, Sara explained that when she approached a new curriculum unit, she began by determining what she described as the “meat and potatoes” of the curriculum. For Sara, this helped to clarify the unit’s most salient parts. She talked about how her ability to identify this core had come with professional experience, that in her first years of teaching she had not been aware of the central goals and objectives in curriculum documents. As a point of reference, Sara was motivated to establish clarity as she negotiated the new unit so that she could achieve a clear and concise understanding of the unit for herself and her students.

Jenna was interested in talking about her teaching philosophy and expressed her commitment to integrating what she described as “ideals” in her work. As an educator, a key point of reference was to maintain the integrity of the relationship she had with each student by concentrating on three attributes: compassion, forgiveness, and grace. She reflected that she tried to begin each day with these in mind. “I try to remind myself daily in the morning: Sometimes I do that very well through the day, and sometimes I don’t” (Jenna #1, p. 1). This relational commitment affected how she negotiated new curriculum materials.

Ideally that’s what I want—I want to be compassionate and demonstrate that, teach, but allow moments of grace to happen. For example, you may not get through the lesson, and maybe you have to address a problem, or really work through something with a student. I hope that I do that more than I don’t, but I know that there are times too when you let things go, and then maybe you aren’t

as compassionate and you push forward because there are time limits and things have to get taught. (Jenna #1, p. 1)

Like Jenna, Helena saw that teaching young students was first and foremost an opportunity to develop healthy and nurturing relationships. She noted that this attention enabled her to identify and develop individual student abilities as well as build positive relationships with students as they learn and grow. Helena had this relationship in mind as she approached the new curriculum.

I think for me being the person who I am is that a big part of being a good teacher is being quite nurturing . . . I think that's a positive thing that teaching draws out of me, and I think that I see that the students respond well to that. (Helena #1, p. 1)

Dave also talked about his vision to foster a positive learning relationship with his students. This he felt was an integral responsibility of his professional role and a key consideration in how he implemented curriculum.

The number one priority is that they enjoy it. If you can tell that they enjoy the learning experience, then teaching it makes it so much easier. The students enjoy you as a teacher . . . the enjoyment part is the key feature, and if I don't enjoy what I'm teaching, then I'm going to try to enjoy how I'm teaching it. (Dave #1, p. 2)

Developing through years of experience, the participants articulate personal philosophic values that underpin and set the stage for negotiating new curriculum. In particular, these values reveal an integral relationship to their students and how negotiating meaning of curriculum is inextricably linked to that relationship. Each

participant saw themselves uniquely, being shaped by their experience and focussing on particularly important facets drawn from a professional life.

Curricular Knowledge and Literacy

As they negotiated new curriculum, the participants' professional knowledge about curriculum was a reference point for making sense of the new curriculum. In particular, the participants in this study identified that when they initiated the process of implementing new curriculum, they drew on a pedagogic repertoire, content knowledge, and an understanding of how to navigate curriculum documents.

In the interviews, pedagogy was a central discussion point in regards to the negotiation of new curriculum. One common pedagogic issue that arose was the theory of differentiated learning. For the participants, the implication of such a theory was that they needed to learn and use a variety of instructional strategies to better accommodate the diversity of learning styles in their classrooms. As they sought out new instructional strategies, the participants' pedagogic repertoire was a point of reference from which they could identify, make sense of, and assimilate new pedagogic ideas introduced in the new curriculum. In a reciprocal partnership, the new curriculum facilitated the potential for an expanding pedagogic repertoire. Dave discussed his interest in adding to his pedagogic repertoire to address students' different learning styles; he hoped that as he negotiated the *Creation Studies* series, he would be inspired to try the ideas he learned from the new unit in other subject areas.

[Different learning styles] That is something that I am learning myself. I know that this unit will help bring that to me because I know that the writers have done a good job of trying to achieve that . . . and I will take some ideas from here and

put it in my Bible. I find my Bible teaching is weak in terms of using teaching strategies that cover different learning styles. (Dave #1, pp.12–13)

In the first interview, Sara foresaw how she might have difficulty negotiating some of the pedagogic strategies suggested in the curriculum unit. She anticipated trying a few new ideas but would mostly use teaching methods already in her pedagogic repertoire so that she could make her teaching situation easier. In contrast, Helena was open to new ideas that expanded her pedagogic repertoire; she desired to move her practice away from traditional seat-work because she found some students, who were quite capable, lost interest and motivation when the practice was limited to seat-work. As she anticipated negotiating a new curriculum unit, she eagerly sought out ways to adjust her teaching to capture the interest and motivation of these kinds of students.

You have these students that struggle in a traditional classroom setting—they do understand things, but I just can't stand it when kids who are perfectly bright don't get to enjoy their elementary school experience. (Helena #2, p. 18)

Building the log cabins is one of those activities for those who don't do desk-work very well; those students shone and rose to be leaders with positive character traits. (Helena #2, p. 9)

A pedagogic repertoire provided a point of reference for the participants, enabling them to identify new pedagogic ideas and transfer them into practice.

The content knowledge in the curriculum was also a point of reference for the participants. Having prior content knowledge was not a prerequisite to teaching a new unit, but as a reference point it had an impact on teacher confidence and the time for negotiation. As the participants explained,

A lot of it was information that wasn't new to me, so that helped because I already had a good understanding of the terms, which was probably helpful in the teaching process. (Sara #2, p. 14)

I wonder if I'm responding to this unit with more excitement because of my love for history. I find when I teach art, too, I find that it's just so much easier because I'm confident about it—so I guess every teacher has their confident and comfortable subjects. (Helena #1, p. 11)

I've taught American history overseas for a number of years, so I'm familiar with that and I know that's exciting, so I know that I'll be able to bring that across.

(Dave #1, p. 11)

For Dave, having the reference of prior knowledge situated him to be a more engaged and informed teacher. He relied less on the text and could discuss more freely with his students.

Students would be discouraged if every time they asked a question, the teacher says, "I don't know." I think the background really helps. It helps me get involved with the students; I can have a lot more fun interacting with them. (Dave #2, pp. 11–12)

In contrast, Nick knew very little about Ancient Greece, so the way he interacted with his students was quite different from Dave because he did not have the reference of prior knowledge.

Like the triremes, the types of ships—tyrenes, tyromese—I kept saying it differently. The kids just laughed at me. They thought that it was hysterical. I'd say to them, "I'm not Greek. It's all Greek to me!" (Nick #2, p. 18)

With little previous content knowledge, Nick noted that he needed to spend time and energy to learn the material that he needed to teach. He also anticipated that since he did not know all the answers, his role as a teacher changed because he would be learning alongside his students.

In addition to content knowledge, the participants were aware of reference points such as vocabulary, layout, and professional conventions typical in curriculum documents. The participants were able to articulate a procedure of how they would use the document as an entry point to negotiate the new curriculum. In the interviews the participants described how they took the text, flipped through it, did some reading, and then directed their attention to various components in the document to begin the process of negotiation.

I always try to read through the curriculum as much as I can. I can't read everything. There are usually some choices, so I try to read through what the outcomes of each lesson are. I try to understand how that works. (Jenna #1, p. 3)

I do a fairly quick read through . . . I try not to do too much of that because I want it to be fairly fresh . . . I look through the introduction, I make sure I know where it's going. I want to know the topics of all the lessons. (Nick #1, p. 4)

I have never had a chance to read everything through before I start . . . there's this one page, the whole unit in short form, and it looks kind of like a calendar page, and it just allows you at a glance to see what is coming up next and so on . . . I find that the most helpful page when I first start out. (Helena #1, p. 2)

Now what I have done is looked at the concept map. That's been helpful. I've looked over the overview so I see where it's going. (Dave #1, p. 5)

The participants described the individual lessons as the focus of attention after the initial browsing. All of the participants said that they would focus on the details of one or two lessons, flesh out the details, decide what and how they would translate lesson ideas into practice, and then implement the lesson. The established procedure, by which the participants read and used the written curriculum documents, was one that they trusted would enable them to make sense of the new curriculum.

Professional Assumptions About Teaching and Learning

Another point of reference was grounded in epistemological beliefs and assumptions. The participants had established views about what they believed knowledge to be, how students learned, and what effective teaching achieved. Although each participant narrated a unique and individual approach to teaching and learning, the data captured and identified some important anchor points that seemed to be consistent. First, the participants were focussed on the content information held in the curriculum documents, which they trusted was the crux of the curriculum for which they were responsible. Second, the participants talked about traditional teaching methods in contrast to new and innovative ones that they anticipated would be in the new curriculum. In their discussion, the participants evaluated and weighed the value of both traditional methods and new ones.

As Dave looked through the new unit, he identified and extracted the information content from the unit. As a point of reference, Dave assumed that the content was the driver of the curriculum as well as the knowledge that needed to be identified and transferred to the students. He demonstrated this assumption by choosing not to try many

of the student activities because they did not focus on information or content. Dave added that focussing on content enabled him to assess for student learning.

What I found is because there's so much information; I usually just wanted to get to the information right away and not to take time to set the stage. (Dave #2, p. 5)

I ended up focussing more on the information than on the neighbour part In order for me to tell myself they actually learned something, something has to be produced. (Dave #2, p. 8)

With the same assumption that the primary responsibility of curriculum documents is to provide the content knowledge, Nick found that his new unit did not adequately provide the content information needed to fulfill the student activities. In the beginning, he tried to make up for what he perceived was lacking in the new unit by spending a great deal of time finding the missing information. He acknowledged that this unit did not fit with his idea of a typical curriculum design where the information was provided for the teacher.

I learned a lot, but I spent my evenings, an hour and hour and a half, with my laptop on my lap researching, going to websites, finding information for the next day. (Nick #2, p. 8)

I would prefer all of it [information] right here in front of me and then be able to say, "Alright this is what we are going to do with this." . . . I would have loved to have two pages of information. (Nick #2, p. 12)

As participants considered new instructional strategies to increase their pedagogic repertoire, they also were concerned about maintaining the integrity of the content, how they would cover it, and if this would be effectively transmitted to their students.

It is okay to change things and leave things out, but I think at the same time when you are changing it you try to keep the information that the authors are trying to get across, that you don't just take out a part of what the unit is about. (Jenna #2, p. 13)

The curriculum I think, all of the knowledge was given. I don't think I took away any of the knowledge that they needed. (Jenna #2, p. 10)

As participants focussed their curricular assumptions on learning as accruing content knowledge, they saw the students being the recipients of this information through their teaching. For example, Sara used phrases like, the students "soaked up a lot of stuff," and that they are "sponges at this age" (Sara #2, p. 22). Traditional instructional strategies were more about transmitting or "giving" students the information. Nick described that this approach could be reduced to "spoon-feeding" the students.

A second assumption about teaching and learning was what participants perceived as traditional teaching methods in contrast to new instructional strategies that had been used in the new curriculum. When participants referred to traditional methods, there was an assumption of known meaning; there was an understanding of what was meant by traditional methods. This was never clearly defined, but when participants talked about traditional methods, they used terms like seat-work, teacher-directed, individual student tasks, textbooks, questions and answers, reading, and paper and pencil evaluations. Dave explained that traditional methods were those that have been used in classrooms for a long time, that the participants themselves had experienced these methods as students. The participants said that, although traditional techniques were less creative than new ideas, they were valuable methods for learning, they took less time,

they required less cognitive energy and preparation for the teacher, they were more controllable and manageable, and some students preferred them. Talking about traditional teaching methods, Dave discussed the importance of using them for effective teaching and learning.

I use reading and answering questions a lot because I know that's an important skill that they will need from now on. I actually make sure that I put that in my units because I know it's important for them later on. (Dave #1, p. 2)

Dave saw a certainty in traditional methods about covering and not missing the curriculum. As he considered new instructional strategies, he wondered whether they were as effective as those he already knew and used. In particular, he talked about textbooks providing students the necessary information clearly and succinctly.

It would have been easier for me to use a whole section in the textbook . . . boom . . . read it and answer the questions. (Dave #1, p. 3)

It's much easier to read and answer questions—I mean you can't really miss with that. With something like this—sort of a jigsaw—there is a greater chance of missing the curriculum—missing the information. (Dave #1, p. 6)

Sara explained that she preferred structured traditional teaching methods, even though she acknowledged that they miss elements of fun and creativity. She found that more straightforward traditional pedagogic approaches enabled her to manage students better because the traditional routines were more familiar, clear, and predictable.

I think the learning is more fun when there is creativity. I think for me, because I'm a very structured person, I find it a challenge at times to do creative things

because I feel like I'm letting go of the control, and that wouldn't be good, so

because of my nature, I tend to stay more on the structured path. (Sara #1, p. 10)

The participants were comfortable using traditional ways of teaching and were especially inclined to use them when they were pressed for time or energy.

I feel like I'm resorting [to transmitting] when I know that—it's more time—it's just knowing that I have to accomplish this amount of material by this time of the year. I think curriculum and my philosophy of teaching are very much carved by the time period to accomplish it. If I have lots of time, then I like to be creative—I like to say that I can be creative even if I was under pressure, but it's harder because creativity takes more time, and then you've got to fit everything into your day. (Jenna #1, p. 2)

If you're having a low energy day or you're still not sure about the curriculum, it's much easier to read and answer questions. (Dave #1, p. 6)

I'll use traditional methods if I don't have the energy and I don't have the time. In science, for example, if I don't have an experiment ready or I wasn't mentally ready to do an experiment, then I would just say, "Turn to this page and answer these questions" because it's just right there; it's simpler. (Dave #1, p. 7)

As a reference point, traditional pedagogic methods were known, practiced, and trusted teaching strategies that could be used effectively to achieve teaching and learning and also served as reference to new and innovative pedagogic ideas in curriculum documents.

Classroom Culture

The context or culture in which new curriculum was negotiated also had an impact on how the participants moved through the process of negotiating meaning. As a

point of reference, it set the stage for negotiating new curriculum in a living system; one that was shared with students, colleagues, parents, and administration; one that functioned in a network of understanding, beliefs, and assumptions; one that was organized around organizing and structuring mechanisms.

One such consideration for each participant was what they perceived the student dynamic to be in their classroom. If they felt the student dynamic was positive and stable, then they were more willing to try new ideas and take professional risks. Nick made the decision to choose a unit that was significantly different from what he preferred.

Personally, I like consistency, but I can also adapt to something that's quite different, and I think that's valuable for the kids. (Nick #2, p. 3)

I am very traditional, and I wouldn't mind doing things the same way, but I also realize in my mind that doesn't always work. (Nick #2, p. 27)

Even though Nick was more comfortable with curriculum units that followed traditional design, he also appreciated and valued what he might learn from units that were less traditional. Nick was willing to take greater risks associated with curriculum materials that were less traditional because he knew that he could trust his class; that they would journey with him through the unknowns. "They [the students] are a really neat bunch—they embrace pretty much everything, and I have a really good rapport with them . . . you know that from the beginning, that it's going to be comfortable with the class" (Nick #1, p. 9). Nick explained that he had experienced classes where the student dynamic was tense and difficult, and he would not take the risks the new unit seemed to require. The student experiences encountered in Nick's past practice stood as a point of reference for Nick's decision making for the new unit.

I find myself as a teacher when I am very comfortable with a class . . . you can go with the flow and just change it up even in the middle, and you can trust that it will be fine. In fact it will be good—it can be exceptional. When you have a class where there is tension and you are always worried about behaviour or whatever, then I think you tend not to be comfortable and you don't go there. (Nick #1, p. 9)

Helena observed that the negotiation of new curriculum depended on the relationship she had with her students. Like Nick, she had experienced what it was like to have a class where she could not be herself. She explained, “Not only can't you do some of those activities, but you have to be more firm and strict, and I would feel like I can't be myself quite the same way with the kids” (Helena #1, p. 3).

As Sara prepared to implement a new unit, she was confronted with difficult classroom dynamics. Her current class had not been positive. For this reason, she anticipated that she would need to modify the unit so that it was more teacher directed.

I noticed that with this curriculum there's a lot of group work, and the class that I have this year has a very difficult time with co-operating in groups. (Sara #1, p. 4)

I'm not sure what I'm going to do yet. What I might do is structure it so that maybe twice in the unit I have the students do group work and the rest of time it will be more individual teaching, because it gets so stressful for the kids. (Sara #1, p. 7)

In contrast, Helena shared that her current class had given her the freedom to be relaxed and to engage in professional learning. “We have a class this year with which you could easily do that [innovate] without being intimidated . . . this year's class was always open—you could easily consider those things” (Helena #2, p. 10).

The interviews showed that the participants were keenly aware of classroom dynamics and the relational aspects of teaching. As a point of reference, this dynamic guided the participants' thinking and choices in negotiating new curricular materials. The participants agreed that having a good relationship with students in a trusting and relaxed atmosphere made them more willing to experiment with new ideas or new practices.

Organizational Culture

Another cultural point of reference was centred on how the teacher interacted with colleagues. Although participants perceived that colleagues were supportive and positive, the data showed that curriculum matters were not formally discussed at a collegial level, nor did participants expect curriculum implementation to be a collaborative process. As a point of reference, they assumed that it was an individual matter and that they were competent to carry it out. Nick described most daily collegial conversations as generally rushed and specific: a transaction that was juggled into the busyness of the day.

It's usually on the fly—and I usually have to remember to do that, and there are so many things that are going on and it's hard to remember all the time—Oh yeah, I have to talk to so-and-so about that particular thing. (Nick #1, p. 10)

Sara talked about her colleague who taught the same grade and same curriculum.

Because of time, we hardly talk. We are good friends, but sometimes we don't even talk all day . . . being in our classroom and working—we just don't. So this is not a priority. If we are going to talk about something else, we would probably have to be intentional. Sometimes we'll talk here or there about curriculum and how it went, but for the most part . . . it's personal. (Sara #2, p. 19)

Jenna, who was teaching the same unit as her grade partner, acknowledged that there was little collaborative conversation with her colleague. She said that, since they were both teaching the same unit, they could talk legitimately, “and I’m not taking up her time for no good reason” (Jenna #1, p. 4). Even though Jenna rationalized legitimacy for professional discourse, she did not actively discuss the curriculum materials with her grade partner.

Helena and Nick, both of whom shared a class with a teaching partner, said that in negotiating the integrated (cross-subject) unit in which they taught only some of subject areas, they did not co-ordinate with their teaching partner for the other subjects. Helena said, “We decided we wouldn’t burden ourselves with all that extra planning on the first time around” (Helena #1, p. 5). Nick noted that if a collaborative effort were to be made in negotiating the new unit, he would need to initiate it with his teaching partner. The participants were aware that their colleagues, like themselves, were already fully occupied in the obligations of their practice and assumed that collegial interaction would add additional stress to fulfilling professional responsibilities. Sara said that she was busy in her classroom working with students, so for her this kind of discussion was neither a priority nor necessary to negotiate new curriculum. “I would like to talk about it, but because of time, it’s very hard to. It’s not because I don’t want to . . . but it just doesn’t happen because there is *so* much to do” (Sara #2, p. 20).

Participants also identified differing teaching styles as another reason they did not collaborate or discuss the implementation of curriculum.

We do teach very differently Ultimately we assess for the same things, but I think we cover different materials as we teach. We use the same core books, but

then we also have our own set of supplies that we accumulated over the years, so I will throw some things in which she may not, and she will throw some things that I may not. (Sara #1, p. 4)

Dave similarly recognized that pedagogical differences amongst his colleagues had an impact on student learning experiences. Students adapted to the pedagogic differences they experienced with each of their teachers. He explained that these differences were not discussed openly but rather respected, and he felt that dialoguing about various pedagogic positions would only lead to collegial tension. “It wouldn’t be helpful for either of us—it would just create bad feelings” (Dave #2, p. 19).

The way that the participants perceived they interacted with their colleagues, along with their rationale for doing so, was a reference point for negotiating new curriculum. The results showed that, for the participants, the process of negotiating meaning of new curriculum was believed to be an individual task and worked out independently. Although the participants saw the potential benefits of collaborative work, they did not view it as necessary to negotiate new curriculum.

Another organizational reference that arose in the discussions was the importance of organizing mechanisms such as timetables, schedules, periods, and bells. Structuring mechanisms such as curriculum guides and overviews were also cultural conventions that were referred to as the participants worked through the unit. Participants viewed time and scheduling as boundaries that had a determining impact on how they could negotiate meaning of the curriculum. For example, as participants anticipated the implementation of a curriculum unit, they also had in mind a time frame for which this unit would be achieved.

I tend to look at the overview, try to figure out how many days I really have to teach it, and I have to usually pare it down a bit to the time frame that's left for that unit. (Jenna #1, p. 3)

I mapped it out and I said, this is a unit and this is how long it will take to teach it and this is how many weeks we have to teach it in the year. (Sara #2, p. 13)

Although some participants had more flexibility than others in determining what curriculum units would be implemented, it was assumed by the participants that administration would provide leadership and direction in curriculum matters. This became evident in a discussion about the pressure to complete all of the curriculum material.

I think there's still pressure from the curriculum co-ordinator to make sure that everything gets done, and I think it's an internal thing; I want to make sure that what I've been assigned to do that I complete and I finish. (Sara #2, p. 12)

Helena and Dave were aware of the yearly curriculum outlines prescribed in the curriculum itself. The availability of curriculum added to pressure to complete as much content as they could. Dave commented in the first interview that he would like to move away from the responsibility to "cover" so much material. He perceived that the curriculum documents themselves directed what and how much material to cover in a school year.

I'd love to get off the fact that we have to cover curriculum . . . that we have to cover so much in one year. I'd love to get away from that . . . the pressure to cover it comes from the beginning of that book [referring to curriculum manual]. Here are all of the units that are to be taught in grade 6. (Dave #1, p. 13)

Various structuring and organizing mechanisms created boundaries on the work of the participants and were perceived as normative and an expected point of reference. In the interviews, the participants were concerned that some of the boundaries limited their ability to implement a new curriculum unit well, but they were accepting that this was a reality in their professional life.

Character of Points of Reference

Trust characterized points of reference as participants narrated a practice grounded in previous professional experience, teaching philosophy, professional assumptions, and institutional protocols and mechanisms. This knowledge had been reconciled in past professional experiences and provided a sensibility and a stability that furthered the participants' confidence, motivation, and their professional ability to negotiate new curriculum. Trust was evident in the clarity and emphasis with which the participants articulated their teaching philosophy and their professional assumptions. As a conceptual boundary, reference provided a structure that was identifiable and tangible to the participants and gave the participants the confidence that, in spite of the unknowns in new curriculum materials, they would be able to negotiate meaning and apply it to their practice. Thinking about the new unit, Jenna spoke of her professional experience as enabling her through the negotiation.

Through the years of teaching you just start to become a bit more confident, but I can't say there's no anxiousness . . . you're still scrambling to find things and get things in order, but I guess there's a bit of sense of calm that you know it will just get done, and you work at things and eventually it will come together. (Jenna #1, p 10)

Negotiating meaning of new curriculum was a process of integrating theoretical curricular concepts to a lived experience. The participants had at hand a variety of strategies and assumptions that enabled them to engage in the uncertainty of new curriculum and to transition them into practice.

Points of Growth

Although the participants trusted several points of reference to negotiate meaning in the new curriculum, this curriculum also presented a number of unknowns that evoked feelings of tension, uncertainty, excitement, and anxiety for the participants. These instances sparked points of growth as participants grappled with the tension of the unknown and worked it out in practice. The participants assumed that they had the capacity to negotiate new curriculum and that, as they grappled with the curriculum documents, they would confront many points of growth in the experience. The interviews found points of growth rising from the participants' professional narrative, the new unit used in the study, and participation in the research study.

Points of Growth in a Professional Narrative

The new curriculum unit facilitated the negotiation of points of growth situated in each participant's professional story. For Dave, his past experiences with negotiating curriculum had led him to believe that curriculum documents provided the necessary and trusted content but that, in order for it to become alive in his classroom, he had to decide on how to deliver the content. Dave said that his goal to use a variety of instructional strategies created a tension for him because the task required more mental preparation and cognitive energy.

The other thing that makes me anxious is that this new curriculum uses a lot of new learning styles . . . it takes a little more mental preparation, and you have to have high energy to pull something like that off. (Dave #1, p. 6)

This was the kind of unit it has to be because you are teaching about the United States, so there's a lot of information. How do I make the information come alive for them? That was the biggest challenge. (Dave #2, p. 1)

Viewing that computer technology was a current and relevant way to have students “buy into” the curricular objectives, Dave decided to integrate computer technology into the unit even though the unit did not direct him to do this. As a point of growth, he found entry points in the unit where the integration of technology was possible, and he designed lessons so that students could use computer skills for learning.

At a workshop that she attended, Helena was introduced to the idea of “pausing” as a way to improve student experience and learning. Even though this strategy was integrated in the new unit, she said that she did not notice it, nor did she attend to it as directed in the unit; instead, she found herself applying pause activities where she felt they emerged and belonged. The idea of pausing sparked an interest and became a point of growth as Helena tested the idea to see how students would respond.

Especially the pause side of things has come to make a lot more sense to me. I find myself being more aware of not necessarily filling in all the silence. When I read a chapter to them—it ended on quite a high climax and I closed the book and slowly paused, and I just let it sit for a bit. They all had quite shocked looks on their faces and they really let the story sink in, and because of the pause part . . . they were just kind of pondering about the people in the book. Wow, they really

sat there and thought about them. So because I had been in the workshop, it was not scary for me. I just let it be, and it became part of the learning. (Helena #1, p. 6)

Sara had taken a course on different learning styles which prompted her to think about how these ideas could be integrated into the new unit. Theoretically the ideas made sense to her, but the implications for practice did not align with her points of reference. She describes the tension this created for her.

I wish that I could implement that even more in the class, but I find that very difficult with the time constraints and other factors. I do try to incorporate that as much as possible; knowing that kids have different learning styles—I try to teach that way. (Sara #1, p. 1)

I think the kids think that learning is more fun when there is creativity. I definitely see that, and that's why I wish it could happen a little bit more. I think for me, because I'm a very structured person, I find it a challenge at times to do creative things because I feel that I'm letting go of the control a little bit, and then I'm, like, if I let things get out of control that wouldn't be very good, so I tend to stay more on the structured path because of my nature. (Sara #1, p. 10)

Sara acknowledged that some of the new ideas opposed her own deeper reference for simplicity, clarity, and organization, but she also understood that more creative approaches might address differentiated learning and be enjoyable for students. In this example, Sara showed how points of reference posed a tension for her as she grappled with new ideas juxtaposed with more established, deeply rooted beliefs.

Points of Growth in the Curriculum Unit

As the participants reviewed and scanned the new unit, they became aware of new pedagogic ideas and strategies that they would apply in practice. Some of these ideas were challenging for the participants, while others evoked a sense of excitement and inspiration. An example that presented itself as a challenge to Sara was how the unit arranged student learning activities in groups. Having taken a course on differentiated learning, Sara was interested in having the students work in groups but felt a hesitation because she was not confident of success. She rationalized that her students could not manage group-based learning well and anticipated that this teaching strategy would require significant preparation. As she considered these ideas, Sara was filled with tension and uncertainty.

I noticed that this curriculum has a lot of group work, and the class that I have this year has a very difficult time with co-operating in groups. They ask to not be put in groups because they just don't get along with each other. (Sara #1, p. 4)

I've actually already taken a look at the group work and how the unit has been written. As it is, you have to provide a lot of the resources yourself, and that's hard. The other teacher already told me that it doesn't come with anything. You have to get everything yourself, and in the groups you have to supply all of this research material for every lesson. You know, you have six groups, and all this research, and you need to provide every single tribe group to share with each other. It's wonderful in theory, but in the practice I see it as being a bit chaotic and a lot of work for me. (Sara #1, p. 7)

The student group work activities in the curriculum unit gave Sara the opportunity to test some ideas she had on differentiated learning. Even though it would have been easier for her to adapt the unit to her preferred style, she was theoretically aware that diversifying instructional strategies might benefit the students. This motivated her to engage in points of growth to better serve and teach the students. In the interviews, Sara described what motivated her to engage in a point of growth to develop ideas about differentiated learning.

I think it's more tactile learning. It helps the kids learn in a different way. It's not just head learning. It's hands learning, and so they are able to grasp concepts in ways which maybe they perhaps don't have the intellectual ability to grasp it when you are teaching it—just dictating it to them . . . but again, it's not something I jump to right away. (Sara #1, p. 11)

Because it's a different kind of learning, it's not just the meat and potatoes. It's more of that creative learning; I think . . . it gives them a bit of a cognitive break but in a different way. It's not so academic. (Sara #2, p. 11)

The idea of differing learning styles had caught her attention even though developing more creative instructional strategies was not her teaching style. Sara experienced tension between a new idea to which she had been exposed and her own comfortable way of conducting teaching and learning in the classroom. She was uncertain how group learning would look in practice and was anxious about losing control in the classroom. As a point of growth, she stepped outside of this reluctance and grappled with how she could successfully use student group activities in the new unit.

Nick was challenged by his perception that the unit documents did not provide adequate information. To align with his preconceived ideas, he initially responded by seeking out the materials himself before teaching, but it was a struggle for him; he found that sustaining this kind of preparation affected the momentum of his teaching. He responded by reconceptualizing his assumptions about teaching and allowing the students and himself to take on a different role.

I took the kids to the computer lab, and I was completely up front with them: “I don’t know the answers. I’m not going to help you. You are going to have trouble, but I want you to find the answers.” . . . I told them up front, “I don’t know if you are going to find the answers. I can’t tell you that there is one website that will satisfy this.” (Nick #2, p. 8)

And I did it myself too, because I wanted to know what they faced. (Nick #2, p. 10)

In this way, the challenge created by the unit concerning content information served as a point of growth for Nick.

The participants noticed ideas in the new unit that resonated with their professional interest and looked forward to seeing how they would be experienced in practice. Jenna commented that the new unit was well written and filled with ideas that provided a creative “spark” that inspired her. For example, she was engaged by the unit’s storytelling strategies, the talking stick, and art integration of Inuit sculpture. This was also true for Helena, who found opportunities in the new unit to expand her pedagogic repertoire beyond teacher-directed seat-work. For example, she decided to take her students to a woodlot to imagine how pioneers must have felt when they arrived to clear

land. She organized a pioneer day and constructed log houses. As Helena browsed through the unit, she attended to these ideas and negotiated them into practice. As the participants noticed new ideas presented in the unit and were motivated to negotiate them in practice, the new ideas provided a point of growth.

Points of Growth in Participation of the Study

Participating in the study made the participants aware of points of growth and provided a motivation to engage in the novelty that curriculum presented. Nick anticipated that his particular unit would provide many points of growth and was willing to participate because he felt supported by his participation in the study. This participation gave him the encouragement to confront a unit he perceived as challenging. He explained,

I didn't really want to do this [teach the unit]. It's not my first choice, but I realized that if I do this and I do it in a deliberate way with organization along the way, and because I'm doing it not only for the students but for another purpose, I think it will help me to teach it better. Now I should just do that anyways, but just having to do this study really helps . . . so that I read it with a whole new set of glasses. (Nick #1, p. 3)

Nick acknowledged that the participation in the study created tension for him because another person was accountable or in the experience with him. He knew that he would have to talk openly and honestly about his teaching experience.

I just thought of it being like someone coming in to do an evaluation or observation of the classroom . . . but a little less scary because you are not being

watched . . . you look at it differently . . . that is a positive . . . to me that's a huge positive, and I will work well under that type of thing. (Nick #1, p. 13)

During the interviews, as Dave described various aspects of implementing the unit, he too became more aware of particular thematic elements that he had initially ignored in an attempt to focus time and attention on the content. As parts of the unit were discussed in the interviews, he began to think about the concept of the “big idea” and realized that many of the student activities he had skipped were integral to developing the big idea. In the second interview, he observed that covering the information did not align with some of the curricular ideas in the new unit, and he realized that developing student learning through a “big idea” or theme might be a legitimate and interesting way to teach and learn. A point of growth was initiated as the discussion in the interview brought to light some aspects of the unit that Dave had not thought about or responded to.

Dave: At the end I ended up focussing more on the information than on the neighbour part, but at the end I'm bringing it back to it again with a test.

Interviewer: As a teacher, do you think that's the most important part? That maybe intrinsically that's what you are thinking—this is what I'm responsible for and then I have to—if this is all the time I have, then this is what I have to get out to them?

Dave: Yes, and I wish it wasn't that way, but that's the tendency. (Dave #2, p. 8)

As Dave discussed this aspect of the unit, he was grappling with the idea of a thematic approach, trying to make sense of its integration in the unit. The idea disturbed his preconceptions of the unit and shifted his thinking about the meaning of the unit.

“Talking about it with you, I'm more anxious about the fact that I didn't get the whole

idea about the neighbour” (Dave #2, p. 22). The conversation in the interview disclosed a new idea that Dave had not considered before and provided a point of growth.

An epistemic element featured in all of the units was a learning model developed by the writers called “DIGS.” As an acronym (delight, investigate, give, and be still), it incorporated important attributes of student learning. Since it was a common feature for all of the participants, it was discussed in all of the interviews to see what meaning had been negotiated by the participants. Sara’s participation in the study motivated her to look more closely at this feature since she had not paid much attention to it in the *Creation Studies* units that she had taught previously. Referring to the first interview, Sara said, “She asked me about those four things so I better make sure I incorporate them” (Sara #2, p. 17). The discussion in the second interview showed that Sara had further considered the inclusion of the DIGS concept and in particular what it implied for student reflection.

Like Sara, the participants were most interested by the “still” or “pause” aspect of the model. Helena admitted that she had not spent a lot of time on the other aspects of the model but had been struck by the *still* idea. Dave said that he was theoretically interested in the idea of being reflective or still, and he had included opportunities in his lesson plans, but he was uncertain if they would transfer to actual practice. He rationalized, “The silent part is going to be the first part that I drop if I’m going to cover the information” (Dave #2, p. 5). Jenna saw DIGS as an underlying theoretical construct that she needed to find out more about to appreciate, but she did not find it necessary to negotiate the meaning of the curriculum.

Character of Points of Growth

Even though the participants were confident that they could meaningfully translate the curriculum into practice, as they scanned and reviewed the new curriculum documents there was anticipation and anxiety about of how this would be experienced. Nick used the metaphor of a piano player with a new piece of music to describe his feelings about the curriculum. He explained,

I have never taught it [the unit] before. It's uncharted territory, and that's one of my fears. I learn through experience and through practice. I'm a piano player, so when I play something, it may not go right the first time, but I learn through that.

To teach this the first time through is a huge learning experience. (Nick #1, p. 3)

In the second interview, Nick commented that as he was in the process of implementing the unit he found his anxiety begin to dissipate. Although the anxiety did not entirely disappear, his practical experience with the unit gave him a sense of confidence. He observed,

You have to make sure that you understand what you're saying so that "fear of the unknown" gets resolved very quickly . . . I think this year, knowing that I just have to do it, I just have to get through it, I just did it, and I did what I knew how to do. So then I researched, and then I went the next day and we just did it . . . I think you just get going, and once you get going you just keep going until you have to stop . . . I know that in the end it's not a life or death situation. It's just a classroom of grade 6s, and if the lesson flops, well, okay. (Nick #2, p. 34)

The participants knew there would be cognitive challenges as well as time invested as they worked through the new unit, and they were open to points of growth.

Nick expressed that teachers are never fully prepared, that the work is not easy and is never finished.

The process is work . . . it takes time, it takes energy, and I don't think that if you are getting into teaching you should think otherwise, because it's going to take work. (Nick #2, p. 31)

In the interviews, Dave and Jenna spoke about teaching as a professional opportunity to continuously try new ideas and to reconceptualize past experiences. The curriculum and the process of negotiating it into practice facilitated the awareness of points of growth.

As you master whatever you are teaching, I think you start to think about how I can teach this differently. That would be more exciting for you, too. When you have to teach the same thing 14 years, you start to master it and to think of more creative ways. When you first start teaching it, I think you kind of are just trying to get a handle on what it is and to see if you can deliver it in an understandable way, and once you realize, okay, this is all it is, then you can think, oh, how many other ways can you deliver that and still manage to get the same message? (Jenna #1, p. 5)

The participants explained that there were many potential points of growth in a new unit, far more than were possible to negotiate in the process of delivering a unit for the first time. Helena said that the teacher must determine and select what will happen in practice while they negotiate time and space.

I guess the feeling that I have mostly when I start a new unit is one of trepidation because I feel that I can't prepare enough. (Helena #1, p. 2)

That's one of the things that make me anxious about the unit—I don't know if I am able to get to that with the time. (Dave #1, p. 8)

In the interviews, the participants spoke of how big the new unit seemed to be, especially in the beginning stages of implementation.

Going through a new unit makes the process much, much longer because I have to look through it and figure out which activities I'm going to do in that particular lesson and which ones will be best suited for my class. (Dave #1, p. 8)

Nick was scared to attempt the new unit because he was afraid of the size; it seemed large and overwhelming.

The participants understood that there were potential points of growth that they did not have the capacity to attend to the first time through. The participants viewed the curriculum materials as evoking a generative potential. Helena summarized her ideas about curriculum and practice.

I guess probably the main thing that I've learned is that you can keep on learning, that there is always more that you can do, and I guess that's on the one hand frustrating and on the other it keeps it exciting. (Helena #2, p. 20)

As the participants worked through the unit, they looked forward to negotiating the unit again because they had become aware of new potential points of growth that would achieve better and richer delivery. The participants were comforted that even though they did not get it all, parts of the curriculum materials had been successfully negotiated, and that was a good starting point for next time. As Dave reflected, "I know what I'll do better next time" (Dave #2, p. 22).

Points of Autonomy

The new unit facilitated and motivated the participants to make choices, be creative, and achieve professional growth. Although participants perceived certain limits to the capacity in which they could act freely, their negotiation of the curriculum showed that they assumed some level of professional autonomy in particular aspects of the curriculum. This autonomy positively motivated them to assert a creative tension to the process of translating written material into a practice. Integrating points of reference with points of growth, the participants spoke of how the curriculum documents induced a creative emotion that enabled them to transform curriculum into a physical experience. Specifically, the participants made choices to simplify or reduce portions of the unit as well as to reconceptualize and make additions to the unit. To negotiate meaning in the new curriculum, the participants responded to curriculum design, resource accessibility, and student dynamic as factors in determining their choices.

Choosing to Reduce or Simplify

All of the participants saw a need to reduce the unit because the documents held far more potential than could possibly be achieved. This aspect of the curriculum positioned them to choose what they deemed most salient, what held their interest, and what fit with their points of reference and growth. Nick described the curriculum documents as the menu from which he could choose; his students and his past experience were important factors in making his choices on that menu. Helena described her approach as somewhat like a “smorgasbord.” “I pick some of the lesson ideas that were best for me, or best for our situation, that work best for the kind of class that I have this year” (Helena #1, p. 3). The participants generally assumed that within the organizational

culture in which teachers worked there was an expectation to reduce curriculum documents in practice. Time was cited most often as the reason to reduce the unit.

There is so much . . . all the teachers talk about that we have to edit. Otherwise, with all the other activities that go on in school, you could end up teaching a unit like this for 3 months. (Helena #1, p. 7)

There's a lot of choice, I think. There is so much in each lesson, and sometimes it does say optional, but sometimes I opted out of things even if it didn't say optional just because it would have taken up a long time and I didn't have that length of time to complete the unit this year. (Jenna #2, p. 1)

Fitting the curriculum into the time frame—that was a challenge, just knowing what I can take out and what I shouldn't take out from the unit. (Jenna #2, p. 5)

In the second interview, Jenna noted that it was difficult to “take on everything in the binder” and advised that it was better to simplify and identify the core so that the unit was manageable for the teacher. The participants also noted that simplifying the unit maintained a positive momentum for the students.

Sometimes I find, especially in teaching the unit for the first time, it can start to drag out because you're not on top of the material, and so if you try to take on everything in the binder, I think that maybe the students get tired of it. If you take it away and try to master the key stuff, they stay more interested because you know you're not losing your place. (Jenna #2, p. 6)

I do try to plan ahead and have a picture of how I'm going to start the unit and identify the key things I want them to learn and then to complete the unit during a

given time, to make sure that it just doesn't go on and on even though there's more you can do. (Helena #2, p. 20)

Because there is *so* much, I had to totally pick and choose. There's no way I could do everything and keep the kids' attention and do it within the amount of time given. (Sara #2, p. 7)

Simplifying the new unit enabled the participants to better manage their negotiation and therefore to maintain better control over how the unit would be implemented.

In reducing or simplifying the unit, the participants were most concerned to maintain the integrity of the content. For the participants, the content was the curriculum, whereas the strategies and peripheral ideas were expendable, changeable, and not essential. The participants discussed their desire to discern what was central to the meaning of the unit.

The process was a long process; it had the discussion and then maybe an activity and then work at their desk, and then closing. It was like four parts, and they usually ended up with three parts, sometimes two parts. It was the process of teaching it, so it wasn't the curriculum, I think. All the knowledge was given. I don't think I took away any of the knowledge that they needed, but the process was shortened, if that makes sense. (Jenna #2, p. 10)

I think I know what I need to do and what I don't need to do—what's more just the fluff. The first years maybe I spent more time on the fluff, not knowing that. That's not necessarily a bad thing, but now I know what the meat and potatoes of a unit are, and I really concentrate on those kinds of things. (Sara #1, p. 9)

Each of these lessons that they call a period lesson is easily a period and a half, and the silent part is the first part that's going to be dropped if you are going to cover your information. What I found is, because there is so much information, I usually just wanted to get the information right away. (Dave #2, p. 5)

In the process of negotiating meaning, the participants determined the most important aspects of the unit and, with that in mind, made decisions about what would be implemented in practice.

Choosing to Reconceptualize

One way to shorten the unit was to reconceptualize the ideas presented so as to test new ideas without dedicating so much time. For example, Sara and Jenna wanted to negotiate meaning for what reflection meant for student learning, but they did not want to commit entire lessons to it. Both of them incorporated shortened activities that enabled them to test what student reflection achieved in practice. Even though Sara and Jenna were uncertain about the value of student reflection, they wanted to honour and consider the idea as a point of growth. Because they perceived a legitimate sense of autonomy, it was valid for them to shorten and modify this aspect of the lesson.

I also reduced it because I felt that spending a whole lesson on reflecting seemed a little bit too much. We could just put it into the other lesson, and that would be alright . . . I was on a time crunch. I needed to get it all in, so maybe we could have spent a day reflecting as well, but it wasn't superstructured. So you know I tend not to then give them one period of just reflecting—five periods of reflection . . . because I had time commitments to get the other stuff done, too. (Sara #2, pp.8–9)

The challenges were that some of the lessons were a little bit too long, and I never got to the closing circle [reflection activity] because socials is usually one of our last periods, and the bell just goes and they're usually midactivity, and we usually closed the lesson at the beginning of the next lesson. (Jenna #2, p. 3)

Dave reconceptualized lesson plans by incorporating his own ideas on learning style differences and the use of technology in the classroom. In the second interview, he gave an example of how he negotiated and added to a particular lesson.

It made suggestions on how to present the information, but for my own personal thinking, I would not do it that way because for me it wouldn't make it come alive. I know these kids, and I know that it wouldn't work for these kids. There's a bunch of different examples in here [browsing the unit]. The flora and fauna one: There were some really good ideas, but I'm looking at it from the perspective of it being the end of the year and what can these guys handle? How can I make it interesting? What can I do with it? . . . I could have done it like this, but I found it kind of dry, so what I like to do is to tie it into technology . . . that's one way that helped it come alive for the students, to make it more relevant by tying it to their technology, and that was a lot of fun. I really enjoyed that. (Dave #2, p. 1)

I changed because—not because I wanted to skip that information but because I wanted to present it in a different way. (Dave #2, p. 16)

Dave was interested in negotiating meaning in the curriculum by adding his creative ideas to the material in the documents. For him, this gave more enjoyment and made the curriculum alive.

Although one lesson took Jenna by surprise, she also demonstrated her flexibility to think fast about alternative ways a lesson could be accomplished. She commented in the second interview that she missed the lesson where she needed a guest speaker, so she quickly improvised and had the students find their own guest speaker on the internet. She commented, “Those are things that happen in new curriculum. Sometimes you get surprises and you ask, ‘How can I make this work with what I have and the time I have to do it?’” (Jenna #2, p. 3). Jenna felt comfortable reconceptualizing the intention of the lesson and made a professional decision of how this could be achieved given the time and resources she had on hand.

Helena and Nick discussed how they needed to reconceptualize the unit because it had been designed to be integrated with several subjects. Since both Helena and Nick taught only the social studies component, they had to make decisions about how to draw social studies elements out of the curriculum documents and recreate a new cohesive unit. Nick also noted that as he prepared lessons, he needed to reconceptualize the time frames and change student activities, black-liners, and evaluation to reflect the social studies component. This added another dimension to the process of negotiating meaning of new curriculum. The participants used the curriculum documents as a framework to create an experience in the classroom.

Choosing to Add

Although Helena did not complete all of the lessons in the unit, she chose to add two lessons about the local history of her area. She was motivated to do this by a book she found on local history and thought it would be a relevant addition to the students’ experience of United Empire Loyalists.

It fits right in, as it turns out, with this unit because I'm learning from a local history book that this area was mostly settled by the United Empire Loyalists . . . some of them settled right here. Some of the names of the streets around here and the name of the library and the name of the pool are all names of Empire Loyalist families that settled here and got land grants. I might have to skip some of the more general activities in this unit so that I can fit . . . some of the local history, and I think that will be really fun . . . I think this adds to their sense of community and maybe also their civic pride so that, you know, when they drive around they say, "This is my town and it has history." I think having a sense of your own history, your own family history, and your community history . . . it is really important. It adds to knowing who you are. (Helena #1, p. 5)

For Helena, choosing to add local material to the unit made sense. Her students would be able to connect to their local history, which would strengthen the meaning of the unit as a whole.

Nick discussed his desire to use a set of Greek vacation photos in a presentation. Unfortunately, he was unable to negotiate this activity and was resigned to saving it for another time. "The photos are electronic, and now I can make a PowerPoint slide show. I haven't had time to do so" (Nick #2, pp. 12–13). Nick sensed that his students would benefit from this resource that would add to the Greek connections made in the unit. The curriculum documents alerted the participants' attention to other relevant and potential resources that could be added to the ideas in the curriculum documents. The participants felt free to add and implement new ideas to the curriculum.

Responding to Curriculum Design

The curriculum documents provided a unit framework from which the participants worked. They trusted that embedded in the framework was the content that needed to be covered or transmitted to the students, but there was also pedagogic freedom to adapt, be creative, and make changes. As Helena pointed out, *Creation Studies* curriculum units included this sentiment when it wrote the following:

This curriculum component is meant to provide teachers with: a framework, teaching ideas, instructional strategies. It is NOT intended to limit or replace teachers' own enthusiasm and initiative. Teachers do NOT need to use all of the learning activities in each lesson to achieve the objectives. We encourage teachers to adapt the lessons and resources to meet their school's curriculum aims and goals as well as the needs of their own students! (Our Historical Community, p. xxvii)

Helena appreciated this aspect of the unit but found places where the curriculum material did not align with this sentiment and needed to be followed prescriptively. In a discussion about evaluation materials, for example, she said,

That's good [referring to the statement in the unit] and yet later on you get the feeling that all the lessons are set up to be taught just so . . . I'm sure the writers mean, "We just want to be as thorough as possible," but in the evaluation pages, it looks like it is assumed that you will teach everything according to how it's laid out. (Helena #1, p. 8)

Helena felt a tension between what the unit said and how it was laid out for student evaluation. She saw the need to adhere to the unit in order to use the provided evaluation

materials, and she felt uncertain about making choices that might compromise her ability to use the evaluation tools.

The other participants in the study did not talk about using the assessment tools available in the unit. They chose to approach evaluation differently.

I honestly have not assessed anything in this unit . . . I mean it's all up here, it's all in my head. Earlier on I would probably say, "I need to have some grades for this," but I know where they're at . . . I would look at how much they got on their crossword, I would look at the details of their answers to the Greek gods. That's one of the other activities that we did. The archaeological dig, they had a whole worksheet on that, so I'd look at the detail of their answers. (Nick #2, pp. 13–14)

I'm not going to have time to explain that [feedback] to them, and that's obviously a huge part of assessment, teaching how to do it better the next time.

I'm really disappointed in that, but that's usually my disappointment throughout the year because I find I never have enough time to really assess and really guide them in the next step. (Dave #2, p. 9)

I don't know how you make the evaluating that is suggested in these units work . . . maybe when I'm not in my first year anymore and not so overwhelmed I can make that work, but I did not find that helpful this year. (Helena #2, p. 18)

The participants found it difficult to negotiate meaning in the assessment and evaluation materials found in the curriculum documents, but knowing that they needed to generate marks for the report card, they chose to use their own methods.

Responding to Resources

The participants' sense of autonomy was impacted by how accessible and available suggested resources were. If resources were not available or accessible, participants understood that they needed to be flexible and would either adapt the activity to what was available or decide not to do the activity at all. Dave expressed how resource accessibility affected his choices. "You need to have those things on hand, and I'm worried that I won't have that on hand . . . I'm good at thinking fast on my feet, so I'll figure out something for that" (Dave #1, p. 6). Nick discussed how the lack of resources changed the way he negotiated the activity. Sometimes he too decided against activities that he thought would not work.

Half the time I took what was here and I just disregarded it because it didn't work . . . so I kind of weaned it down. (Nick #2, p. 9)

I had very few resources as far as books. There are five books in our library. I went to the public library, and they told me I could only take three. They were gracious and gave me four . . . and that was pretty good, but every lesson in here is a discovery lesson, and the kids have to go and discover, and they have to find the information in books that I did not have. (Nick #2, p. 7)

Since Nick had limited access to books for research, he made the choice to rely instead on computer search engines. Nick also chose not to complete some of the student research activities because he did not have information readily available and internet searches took more time than direct teaching.

Helena appreciated that the unit gave her choices concerning resources. Sometimes it required specialized resources that the writers knew would take time and

effort. They gave simpler options that required less effort. In this way, the unit supported and honoured the teacher's contextual position as well as the discretion to make pedagogic choices.

[Log cabin activity] On the page there were three possible ways to do it—you could connect all kinds of Kinnex or Timber Blocks, or you could actually glue together sticks . . . or you could roll up paper around a pencil, and that's what they ended up doing. So, you know, on a second time around when you know that's coming up, you can all year be looking for this and that and the other thing—the supplies—but even when you couldn't, there was a suggestion that made it possible anyway. (Helena #2, p. 10)

I mean, there were suggestions for doing bigger and greater things, but if you couldn't or didn't want to or whatever, you could still make it work. (Helena #2, p. 11)

Sara discussed how she chose not to do an art project because the supplies were not available. In contrast, when student resources were collected and made available to her by a colleague, she was encouraged to negotiate a point of growth where students were required to do group work activities. In this case, Sara did not have to research and collect materials and could use the time to negotiate how she would successfully achieve student group work in her classroom.

It worked well because [colleague] already had a lot of it photocopied, so she said, "I've got it all. Would you like to use it?" So I did, and it was fantastic and it was fine, so that just helped tremendously. (Sara #2, p. 2)

By having access to available resources, Sara was more inclined to try group activities.

Responding to Student Dynamic

Nick discussed the need to make choices about the curriculum in relationship to the kinds of students he had in his class. If he did the same things the same way each time, he would not be thinking about the needs of his students.

You are going to tailor it [curriculum] to what you have available to you that year.

You might have to tailor it for the kids in your class, because some classes are academically stronger and some are weaker. (Nick #2, p. 1)

This is what I did and I might do it that way next time, but as I said before, you never know what kind of students you are going to get and you may need to cut things and make them simple because the students can't manage that . . . I always want to come at it with a fresh approach—this is the class, and this is how I'm going to do it. (Nick #2, pp. 25–26)

Helena also spoke about being discerning and choosing ideas that worked well with the classroom reality.

You pick your favourite parts with what you think would work with your class and what you think would maybe not work so well with your class or maybe wouldn't work so well with this particular time of the year. (Helena #2, p. 6)

There are a lot of limits to that because before you get into the classroom and meet and get to know the students, you can get pretty idealistic. (Helena #2, p. 15)

Dave talked about choices that he needed to make, given the capacity of his students. In this particular new unit, he decided to simplify the instructional time so that the students could focus on the information rather than the processing skills that the activity suggested. He explained why he changed the lesson activity.

The kids would not know how to organize their notes With only three periods, I needed all the time to teach the history and involve them in the history rather than teach them how to organize their notes. (Dave #2, p. 2)

Dave followed this comment with a discussion about how he took the lesson idea and used new instructional methods that incorporated different learning styles and technology. With this choice, he felt that he was gaining a higher level of student interest and buy-in. In the first interview, Dave had anticipated that he would have to “sell the unit” to his students. In the second interview, Dave was willing to share some of his creative ideas for hooking into his students’ interests.

Dave also chose not to negotiate parts of the unit because he found the curriculum materials would need to be modified for the level of his students.

There are some neat ideas, but it’s so general for grade 6. I don’t think they’ll be able to handle it. I’d love to try it with them and see. I could be totally wrong, but I’m looking at this and going . . . this is way too broad—that’s my personal feelings on that—this is way too broad for grade 6. (Dave #2, p. 10)

Sara contemplated choosing not to follow the unit materials because her students could not function effectively in groups. She considered making the lessons more structured and teacher directed.

I noticed that with this curriculum there’s a lot of group work, and the class I have this year has a very difficult time with co-operating in groups . . . I have put them in groups from time to time because I think it’s good for them, but I don’t know if I’m going to use that aspect or if I’m going to keep them in their seating arrangement and then just change things a little bit—to make it more enjoyable

for them. I might do a bit of both . . . it will make my job maybe a bit easier too.

(Sara #1, p. 4)

All of these examples demonstrate that the student dynamic was a factor in what choices the participants made as they translated curriculum documents into practice.

Character of Points of Autonomy

Having autonomy empowered the participants to respond to the living character of their work. The participants began each day with a generalized plan but acknowledged that many factors could shift their thinking and choices.

The reality is that there's a lot of maintenance and classroom management that occurs, and that takes up time. It doesn't just go as the book says or the curriculum says. There are interruptions, and there are students who are absent.

(Jenna #1, p. 2)

Sometimes there are questions that they bring up which take you elsewhere than where you imagined. Some things are completely off topic. The amount of time we have in our class, it depends on what is happening during the day. There are all kinds of things that make a lesson what it is. It's the students in your class, it's the interruptions, it's what you have ready or what you've forgotten—it comes to life when you are teaching. (Jenna #2, p. 12)

Sometimes I would look at a lesson and go, "Oh, I think we'll skip that one," and as I mulled it over and think, "Well, that would actually be really . . ." and change my plans as I mulled it over, and sometimes it was the other way around. I would plan on something and then think, "No, I don't think we'll do that after all."

(Helena #2, p. 16)

I know that when you teach new curriculum it's not always going to work, so I kind of go with the flow—I'll try this and if that doesn't work, we'll skip that and go on to the next part. (Sara #2, p. 8)

The participants recognized the emergent nature of their work and expected that the new curriculum would be integrated into a living experience that had implications far beyond the curriculum itself.

Participants did not attend to all of the possible elements of a new unit but chose particular aspects that had caught their attention and were deemed salient. Although the participants felt responsible for keeping intact the unit's content, they demonstrated a professional sense of autonomy in other aspects of the curriculum documents, which included design, instructional strategies, and evaluation. With the unit not being followed prescriptively, the professional outcome varied from one teacher to another. As a point of autonomy, Jenna summarized,

I think that for every teacher, they have to kind of make it their own a bit . . . and that's what they find exciting . . . you know some of those ideas come from the ideas that are in here [the unit]. They are the spark, and then I just kind of make them my own. (Jenna #2, p. 8)

The participants approached and negotiated the new curriculum with an expectation of creativity. As they grappled with new material, they found the capacity to choose, grow, and bring the curriculum to life.

Points of Reconciliation

In the second interview, the participants reflected on the experience of implementing a new curriculum unit. As they discussed the experience, they also articulated their professional learning: what the unit had achieved in practice and what

this meant to the participants. Points of reconciliation occurred throughout the process of negotiating meaning, but it was the second interview that marked the culmination of an experience and an opportunity to discuss tangible ideas and concepts that contributed to making sense of the new unit. As the participants discussed the meaning the units held for them, they did so with a tone of delight, satisfaction, and excitement. Points of reconciliation were articulated by the participants as they discussed experiential highlights or meaningful realizations that were outcomes of their negotiation. In particular, the participants discussed points of reconciliation that were shaped by curriculum outcomes, student response, emerging professional narrative, and participation in the study. The discussion brought to the surface the meaning the participants had negotiated as they had translated curriculum documents into practice.

Curriculum Outcomes

As the participants negotiated *Creation Studies* curriculum, they were confronted with design features that were consistent throughout the series. The DIGS learning model was a unique feature that was woven in the introductory materials of the unit as well as identified in each lesson. As a way to understand the process of negotiating meaning in new curriculum, the participants were asked to talk about what this model meant to them and how they applied its meaning in practice. All of the participants described their sense of ambiguity about the model. They were somewhat aware of particular vocabulary used to define or indicate DIGS in the unit, but they were unclear how it was demonstrated in practice. They saw that DIGS was embedded in the unit and would be present in some way if the unit was implemented, but they needed more time and experience to fully comprehend its relevance to the curriculum.

The data showed that most of the participants were interested in the “still” or “pause” component of the model. Helena applied her understanding of pausing to her practice and discussed this experience as a point of reconciliation.

The thing I focussed on most I think was the “pause.” I tried to remember to have a pause—especially while I was reading the story . . . I didn’t really spend a lot of time on the others. (Helena #2, p. 8)

At the end of the novel in this particular pioneer family a little sister dies because of a snake bite. I was reading that fairly meaningfully and dramatically, I guess, and paused after that and the class was – well it was very upsetting for them ...I’m glad I left a pause, I guess, because really they needed – I couldn’t have just kept going on reading. It was quite traumatic. [But it was powerful.] Oh yes – yes, yes, yes. (Helena #2, p. 8)

Helena found that, by taking time to confront and reflect on difficult situations, her students were experiencing authentic and relevant life questions. For Helena, this outcome demonstrated a point of reconciliation.

Sara’s discussion about DIGS focussed also on the “still” component. Unlike Helena, Sara’s interpretation and experience left her a little more uncertain about its usefulness as a way to improve student learning. She found some of its interpretation to be “New Age” and was unsure about how students would experience the exercise. Some of her hesitation came from the way the directions in the unit were worded. Sara described what she was thinking when she read the directions for the students.

It says, “Invite students to be still as they listen to God’s voice.” So it’s kind of like subliminal, because then you have to tell them what God’s voice is. You need

to explain to them what he wants to tell them, but I guess at the same time I'm like, well, it's a reflective thing, too. (Sara #2, p. 17)

As long as you present it in the right way, you know, it's more of a reflection, too—God could speak to them in that moment but more based on what we've talked about, “How can you now summarize what God is saying to you?” That was kind of the direction I took with it. (Sara #2, p. 15)

Sara was surprised by the student response, which revealed interesting insight into what students were thinking. This experience was a point of reconciliation for Sara.

They did respond, and it surprised me because actually I didn't do this in the other first curriculum that I taught It asked me to do it, too, and I just didn't think it was necessary. I don't know, I just didn't do it, but this time I thought, “She asked me about those four things. I better make sure that I incorporate them,” and they did. They responded It taught me something; kids are a lot more insightful sometimes than I give them credit for. (Sara #2, p. 17)

Dave admitted that he included the “still” portion in his lessons, but it did not always happen. In the second interview, he articulated one example of how he used the idea from the lesson and experienced what a still component meant for the classroom. Although he expressed an appreciation for incorporating this aspect, he thought it was not essential to student learning but was rather an extra that could be included if time permitted.

So I actually put a spot in there for that. Now, when I teach, it might go out the window. I might say that the kids aren't ready to handle this, or I'm not ready to handle it, or it's just not going to go, or we don't have time—if anything—that

will be the first to go. But I have made time in all of the lessons I've made, both lessons I've made this week, so I like the idea. I like all the intentional thought process behind how it's organized. (Dave #1, p. 8)

Nick was saturated with other curricular elements, so he did not give any attention to the presence of DIGS in the unit until we discussed it in the second interview. His focus on the unit, he said, was on investigation; the unit demanded this. As for the "still" component, Nick admitted, "Unfortunately that was not done" (Nick #2, p. 24). He added, "I would incorporate that [still], but I felt overwhelmed in the sense that I had to achieve or accomplish this much at least" (Nick #2, p. 24).

Instead, Nick grappled with another feature of curriculum design when he found that the content information was not included in the unit. After initially trying to accommodate by gathering the information himself, he realized that he did not have the time, and he shifted his teaching from transmitting information to searching and discovering information about Ancient Greece. The unit design assisted Nick to see himself in a different teaching role: from transmitter and in control of content to facilitator and discovering information alongside his students. This experience in practice was a point of reconciliation for Nick as he expressed his appreciation for the energy, time, and cognitive work he and his students took to achieve learning.

That's what this unit is about. It's not about me giving them the information, but it's about me giving them the opportunity to go and seek it themselves It was not only a discovery for the students but also for the teacher. (Nick #2, pp. 12–13)

Realizing that the unit was designed to develop investigation and discovery was a point of reconciliation for Nick.

Another design feature of the *Creation Studies* series was the development of a big idea or overarching theme. This feature of the unit shifted the participants' attention from extracting content to understanding the unit from a thematic perspective. This understanding developed over the 6-week period of implementing the unit into practice. For example, Dave's appreciation of the main theme "being a neighbour" was not central to his process in the beginning stages of negotiating the unit. During the second interview, Dave observed that he had been so wrapped up in the information and creating a variety of instructional strategies that he had not really thought too much of the theme. As he progressed through the unit, activities in the lesson kept revisiting the theme, and he progressively realized that there may be value to this approach. As he talked about it in the second interview, Dave realized that he had chosen not to attend closely to this idea but saw that it might be significant to student learning. He wondered how he might capture some of its essence before he finished the unit and also reconciled that he would move this idea forward to the next time he would implement this unit.

Helena realized that curriculum materials relative to a big idea or theme required deeper thinking and understanding. Even though she felt she had grasped the unit's intent to grapple with "God's faithfulness," she noted that this area continued to confound her own thinking.

I think I especially would focus more the next time on the whole "God's faithfulness" theme that was there, which I guess I would have to think more through myself . . . how do you teach about God's faithfulness when there were all these tragedies? Especially to kids who are only 8 or 9. Sometimes I was

fearful of asking some of those questions in case I would be sowing doubts into these little minds. (Helena #2, p. 12)

As with Dave, Helena experienced how the big idea motivated deeper thinking and meaning for the unit. It captured the teacher's thinking, but it was relevant and important to the students, too. Negotiating meaning in curriculum, therefore, was facilitated by the integration of a big idea because the inclusion reduced fragmentation and strengthened negotiation of meaning in a way that was different from acquiring content information.

In the second interview, Nick was still unclear about the theme of the unit. Having not completed the unit by the end of the school year and feeling spent by the experience, he acknowledged that he was lost in what had been a daunting task. He did not achieve meaning in the same way that other participants had. He felt that there had been positive learning experiences but acknowledged he was far from reconciling the unit.

Interviewer: So when you think about the unit as a whole, what do you think that big idea or enduring understanding is for the unit? What's the thread that weaves the unit together?

Nick: I don't know. That's—to be truly honest, I really don't know. I could speculate that it is about learning about their value and their part of history. We did a time line, and we are going to find out where they fit into this whole picture. How did they contribute to where we are now? But I don't know—it didn't go “wow” . . . I mean, it's a good question, but I don't know that I have enough to even answer that. (Nick #2, p. 23)

As Nick negotiated meaning for the unit, he had not reconciled the thematic design feature in the same way as the other participants because he was cognitively engaged in

other elements. He observed that both he and the students needed to continue with the unit in the next school year to bring closure to the learning experience.

Student Response

As the participants spoke of their experience of implementing a new curriculum, they recognized that how they interpreted and reconciled meaning was dependent on student response. Translating written curriculum text into practice could only happen in relationship with students, and in this way negotiating meaning was a relational lived experience. In the first interview, Sara said she was concerned about implementing the student group activities of the unit, and this became the first point of discussion when we sat down for the second interview. There was a positive emotional response as she described the experience.

I was happy with how smoothly the curriculum went. I was a little concerned that there would be issues with groups, and I found that I ended up putting the kids in groups, but I made them smaller So that's one thing that went really well.

They seemed to be able to function a lot better when there weren't as many distractions. (Sara #2, p. 1)

Although initially hesitant to implement any group-based student activities, Sara reconceptualized some of the unit ideas and achieved a positive learning experience for her students. This challenge was successfully negotiated in practice and represented a point of reconciliation for Sara.

Uncertain as to how students would respond to reflection of their learning, Sara and Jenna were surprised by how engaged students were in these discussions and how

insightful they were about more abstract concepts like stereotyping. These discussions stood out as a highlight to negotiating meaning in the new unit.

I really enjoyed being a part of the student's appreciation for the First Nations and dialoguing with them. They had a really good understanding of some of the terms like stereotyping someone and we shouldn't do that. I hope that seeds were planted and that hopefully this can carry into other areas of life. (Sara #2, p. 1)

There were a few things that I liked, and I usually like the things that get the students excited. They liked the storytelling . . . that was great. They really get into that, and they had really neat reflections about that. We liked circle time with the talking stick. The talking stick was nothing more than a miniature baseball bat that I stuck some feathers on, but they loved it . . . they knew they had to wait till they had the stick in their hand before they could talk . . . we liked circle times, and they could all reflect on the lesson that had happened . . . they really responded to that. It was neat. (Jenna #2, pp. 1–2)

If you don't take the time to talk and dialogue after a lesson, sometimes we miss out as teachers on those enriching moments when you can see that they really got that. That's a reward for the teacher. (Jenna #1, p. 7)

As a point of reconciliation, Jenna and Sara developed a new appreciation for the insight that became accessible when they implemented reflective student activities. The student response to these activities validated integrating these opportunities for student learning.

Even though Helena could not articulate why, she assessed that her students seemed to be "taking to the unit." They were authentically engaged in the learning

activities, and she was aware of these positive reactions as she implemented the unit. In the second interview, Helena described how engaged her students had become.

That [pioneer day] was very fun. I had taken pictures of all the kids. Oh, it was a real treat that day. (Helena #2, p. 1)

I would read the novel, which the kids loved. It just showed me again how valuable just reading to them without visuals, no TV, no movie addition or anything else, just reading to them. They'd be openmouthed and listening and doing all the creative work, imaging it. (Helena #2, p. 6)

Student response was an analytic tool that helped Helena to develop meaning about the unit. These highlighted experiences were points of reconciliation that articulated the meaning she had acquired.

Professional Narrative

In the first interview, Dave perceived that his biggest challenge would be to prepare lessons that covered the information about the United States in a creative and engaging way for his students. He was interested in expanding his pedagogic repertoire so that he could develop strategies to address differentiated learning. He wanted to be intentional about incorporating a variety of instructional strategies to deliver lessons that reflected his belief that students have different learning styles. It was with a sense of excitement that Dave shared how he had reconceptualized a particular lesson and how he felt that the experience did achieve and integrate several different learning styles.

Interviewer: What I'm hearing from you too is that you took a challenge—what you thought was a challenge, and you reconceptualized it to make it so that it became a highlight.

Dave: Oh yes. I love that. I love that—that gets me excited. (Dave #2, p. 4)

Helena appreciated how the new unit moved away from traditional seat-work to experiential learning activities. She described how these activities in practice achieved a better learning dynamic, especially for some students.

For example, another highlight was building log cabins. That's part of the activity that's recommended, and they had so much fun with that, and it was really one of those activities for those who don't do desk-work and seat-work so well and for whom that's not a favourite thing and for whom that's difficult. They shone with this. (Helena #2, p. 9)

Helena's desire to incorporate less traditional techniques was affirmed by her experience with the unit, and this affirmation was a point of reconciliation.

Jenna was interested in how reflecting activities would change the capacity for learning in the classroom. She saw that these design features in the unit had the potential for a pedagogic shift towards a "progressive constructivist practice" which she valued theoretically. For Jenna, this type of learning experience was more meaningful because students took more ownership and worked through it themselves. In the second interview, Jenna articulated how the reflective component of the DIGS model had motivated her to further unravel this learning model as a way to integrate constructivist ideas. She observed that reflective practice for effective learning could also be applied to teachers.

I think just as we are teaching our students to reflect and to think about what they are learning, teaching is also a learning process, so we as teachers should reflect on how we can be better teachers. If we don't reflect on what we are teaching and learning, how can we really grow? I think you grow better when you take the time

to think about what you are actually doing. In reflection one can ask, why do I plan and implement the way that I do? Can I change it or make it different? Am I leaving essential and key elements out? Am I doing justice to what has been written here [curriculum documents]? (Jenna #2, p. 15)

Jenna's classroom experience of student reflecting activities set in the new curriculum achieved a measure of sense making about constructivist theory. Having experienced theoretical constructs in practice resulted in a point of reconciliation for Jenna.

Participation in the Study

The participants were interested in the research study for professional growth. They expected that their involvement would make them more aware of the process of implementing new curriculum.

I think participating just helps me to delve into things with a bit more focus.

(Helena #1, p. 13)

It helps me to be more aware of what I'm teaching and why I'm teaching it. In a way it's a blessing, and I'm glad I can be part of it [the study], and hopefully I'll be able to contribute. (Sara #1, p. 12)

As the participants told their story of negotiating a new curriculum unit (what they did, what they hoped for, what they were worried about, and what they believed about teaching and learning), they were hearing a conscious and accessible expression of their experience. Jenna reflected that the interview gave her a chance to communicate and clarify the process of negotiation, to reflect on the practice of teaching, and to bring to the surface particular elements that became highlighted in the experience. She summarized,

“Now I’ve said it and it makes more sense to me. You’ve responded, and that further clarifies what I’m thinking” (Jenna #2, p. 16).

Sometimes reconciliation occurred in the interview itself. As Dave was speaking in the second interview, he realized that the big idea of neighbours might have been a valuable aspect that he had chosen not to negotiate. He explained that he was becoming more aware of the importance of the thematic concept that connected the lessons together. The discussion in the interview brought to Dave’s attention that he had not fully considered the role of the big idea in the unit and that it might have more significance than he first thought. He saw the idea evolving as he proceeded through the lessons one by one, but since he had chosen not to do the various activities, his students did not have the prerequisite experiences to integrate this new understanding. He anticipated how he would negotiate meaning of the unit in the future.

Character of Points of Reconciliation

As participants talked about the points of reconciliation and the meaning they had acquired about the new unit, there was not an air of closure. Instead, participants spoke of their reconciliation as generative; the outcomes were not absolute or complete but rather points to look forward to. They discussed how reconciliation led them to think creatively so that the negotiation of meaning would be enriched and expanded the next time the activity would be implemented. The participants spoke of this with a sense of excitement and anticipation.

Dave reflected how this experience set the stage for the next time. He finished the conversation by saying that missing a component in the unit the first time around was acceptable and the resulting experience was good enough. This seemed to be the sense for

Nick and Helena, who did not finish all of the lessons in the unit. In the second interview, Sara also discussed the inability to experience some of the student activities this time around because of lack of resources and preparation time. Her awareness set the stage for the next time she implemented this unit.

Sara: I enjoyed it. It was good to do. I think every time you teach a new curriculum you do this anyways in a way, right? You evaluate it as you go through.

Interviewer: Would you look forward to teaching it again?

Sara: Yes I would, definitely, and I think I would add some things now, too.

There were some suggestions made that I was going to do, but then I couldn't because we didn't have a lot of time or some things took too long or whatever. So I will enjoy adding some other things, for example, Inuit art . . . so there are different things I can do with it. Those are those creative sparks you were talking about. (Sara #2, pp. 18–19)

Nick saw how he could improve activities for his students. The archaeological dig was a highlight that inspired him to be even more creative.

The next time, even though that was a highlight, I found it to lack. I would like to do something even better . . . and that's personally how I learn. I don't mind teaching something for the first time, but I can be very hard on myself: "Alright, now, that was good, but how can I make that better?" (Nick #2, p. 6)

The first round of negotiating meaning and reconciliation was not a finished experience. Even though the participants were uncertain whether they would ever implement the new unit again, all of them anticipated how this experience would inform them another time.

This thinking was also evident in the journals that participants kept as part of their participation in the study. When asked about the usefulness of the journal, the participants felt that its value would become more apparent when the unit was implemented again.

I think it [journal] will be [useful] when I go back and reflect on this. (Nick #2, p. 25)

If I hadn't made any notes, then the next time around I would approach this unit probably having some general memories of how it went and what went well what didn't go well. When you have notes, then you can plan accordingly. You can make sure that you include what went well, although I guess from one class to the next it doesn't mean it's going to go well again, but they are just reminders.

(Helena #2, p. 11)

It will be really nice the second time I go through these units to look at this again . . . that's going to be good, because I've never done that before. (Dave #2, p. 24)

For next year I know that something didn't work or that I was missing something when I went to the lesson. They serve as reminders to me . . . I see the writing of binders as helpful for the next time that I teach it. (Jenna #2, p. 8)

What was most evident in the journal data was that the participants' reflections were pragmatic. The journal data, which they viewed as generative, represented points of reconciliation for the participants.

Chapter Summary

The results were organized according to four points of negotiation: reference, growth, autonomy, and reconciliation. These points can be understood as attributes in

which the participants actively engaged during the process of negotiating meaning of the new curriculum. Together the four points of negotiation provide a framework from which to theorize how teachers negotiate meaning of curriculum and how they actively translate this into their practice. In the following chapter, the framework will be used to develop a theory of how teachers negotiate meaning of new curriculum.

CHAPTER FIVE: SUMMARY, DISCUSSION, AND IMPLICATIONS

The question of curriculum implementation—the transformation from theory into practice—is a compelling one. Every day, teachers negotiate and interpret professional obligations that begin as theory and become represented in the actions and outcomes of their practice. In particular, the challenge of a discrepancy or gap between curriculum as theory and curriculum as embodied in practice has been most prevalently viewed from a positivist perspective (e.g. Puk & Haines, 1998). From this perspective, the gap is seen as a matter of deficiency: a deficiency in the curriculum materials, a deficiency of the teacher, a deficiency of the organization to provide the necessary resources. Studies about implementing new curricular initiatives have shown that in spite of an apparent desire and value for particular theoretical constructs, teachers do not sustainably integrate them into their practice. To understand why there is discrepancy between theory and practice, I set out to discover how teachers bring life to curriculum and how they negotiate its meaning.

The purpose of the study was to develop a theory of how teachers negotiate meaning of new curriculum. The chapter begins with a summary of how the research took place and how the data were collected and analyzed. This is followed by a discussion of some of the key ideas that arose from the research. These ideas provide a foundation for a theory of how teachers negotiate meaning of curriculum. The discussion concludes by identifying implications for teacher learning, curriculum development, and further research. Finally, I reflect on some personal thoughts concerning the research project.

Summary of the Study

The study examined the experiences of curriculum implementation as narrated by 5 participants as they lived the process of negotiating new curriculum. Five teachers from

an independent elementary school system voluntarily participated and were interviewed at the onset of implementing new curriculum materials and again at the conclusion (approximately 6 weeks). The interviews were semistructured, which enabled participants to discuss specific individual experiences in their practice. In the first interview, they were also asked to journal in the teacher manual during their weeks of implementation. The participants brought these journals to share at the second interview. All of the participants were implementing a new social studies curriculum developed in units that had been designed as a series entitled *Creation Studies*. Integrated within the units were new design features that included pedagogical implications for learning, in particular the inclusion of student reflection and learning organized around a central theme or “big idea.” Data for the study were collected from the interviews, the participants’ journals, and related curriculum documents.

Data from the interviews were transcribed as well as summarized and returned to the participants to verify for accuracy. Data were then organized into descriptive codes to generate concepts. With the configuration and reconfiguration of these codes, themes were conceptualized as four points of negotiation or constructs (reference, growth, autonomy, reconciliation). These four points of negotiation provided a theoretical framework to describe how the participants negotiated meaning of the new curriculum. Each point of negotiation was also characterized by an emotion (trust, anxiety, inspiration, delight), and these senses became a useful analysis tool in deciding how the data should be moved and understood.

The analysis provided four points of negotiation or attributes important in theorizing how teachers negotiate meaning of new curriculum. First, the participants

relied on a personal knowledge framework of reference, which included curricular knowledge and literacy, teaching philosophy, professional assumptions about teaching and learning, and assumptions about cultural norms situated in classrooms and schools. These references provided a foundation and an entry point into the new curriculum and gave the participants the confidence that they would be able to negotiate meaning. Reference provided stability and grounding and gave the participants sufficient trust to move forward into the unknowns or uncertainty of the new curriculum. Second, in the context of that personal framework or reference, the participants anticipated the new curriculum documents with a sense of uncertainty, anxiety, or even trepidation that they identified as disturbing or challenging. This generated tension and instability and ignited a potential point of growth for teacher learning. The decision to engage in the potential point of growth represented the teachers' free will or autonomy to creatively work at stabilizing or resolving the instability of the unknown aspect. The choice to negotiate and experience a particular component of the new curriculum represented the third essential attribute. Classroom practice was the context for which the teachers' choice or decision could happen. Once a component was experienced in practice, the fourth attribute emerged as participants shifted theoretical constructs to a practical knowing or reconciliation. This shift from unknown to known evoked a sense of satisfaction and even delight in the participants as they described their experience of practice. Together, these four attributes provide a theoretical framework from which the negotiation of meaning of new curriculum could be studied and theorized.

Discussion

Four areas of discussion are linked in theorizing how teachers negotiate meaning of curricular documents to demonstrate the relationship of teacher learning and teacher knowledge. The discussion begins with identifying philosophic assumptions concerning epistemology and how, in negotiating meaning, the participants straddled more than one ideology. Second, the discussion centres on the limitations theoretical constructs have in a practical setting. These limitations present inadequate curricular resolutions so that teachers are required to interpret, modify, and adapt theoretical constructs to the context of their practice. Third, the conception of a constructivist theoretical model of teacher learning and teacher knowledge is discussed as a way to understand how teachers negotiate meaning of new curriculum. Fourth, learning implications for collegial interaction are identified in light of this model.

Epistemology

The question of negotiating meaning is one of how teachers come to interpret or know. This research raises awareness of a paradigmatic shift from positivist to constructivist epistemic assumptions. The comparison brings to the surface the limitations of positivist thinking and understanding in developing a theory of how teachers negotiate meaning of curriculum. The positivist assumption that negotiating meaning implies passive application of external existing knowledge articulated in documents is a very different view from conceiving it as a process of knowledge construction and learning in the dynamic of practice. Korthagen and Lagerwerf (2001) point out this difference in how the gap between theory and practice has been interpreted from a dominating positivist view.

As so often happens in situations where a certain scientific paradigm is dominant, researchers in the field of teaching and teacher education tend to interpret the gap between theory and practice in teaching education in terms of this paradigm, seeing it as the problem of improving the transfer of theories, presented in teacher education (episteme) to teaching practices, or in other words, as the problem of promoting the “application” of existing knowledge. (p. 200)

The findings of this research justify the assertions of Korthagen and Lagerwerf as well as Thayer-Bacon (2003), who argue that the loss of epistemic introspection in a theory of knowledge has been due to the deep hold of positivist thinking. In asking how teachers negotiate meaning of new curriculum, the integration of epistemological insight was an important consideration. Although a comprehensive description of positivist and constructivist ideologies was beyond the scope of this project, the philosophic differences are important in understanding how negotiating meaning is understood and the implications this brings to professional and curriculum development. By considering how teachers negotiate meaning from a constructivist perspective, the question of discrepancy between theory and practice is analyzed with a new epistemic lens, and its implications are quite different from the conclusions of past research.

In light of paradigmatic difference, it is relevant to ask what the curriculum documents represented in negotiating the meaning of curriculum. In practice, a positivist conception presents a conflict and tension. The participants grappled with and responded to this tension in an interesting way. Campbell (2006) explains that the divergence of planned curriculum and the one enacted by teachers is in part influenced by issues of authority. She points out that just as teachers are expected to honour curricular authority,

they are also answerable to their own professional authority. To be responsible to both, the participants negotiated the curriculum with two distinct approaches. On the one hand, the participants demonstrated a curricular authority by articulating their obligation to honour particular aspects of the curriculum while at the same time interpreting professional discretion in other areas. In particular, they were motivated to honour the work of curriculum developers and trusted the legitimacy of the content information that had been imposed by the documents on them. Positivist assumptions about theory and practice where curriculum documents hold an authoritative and hierarchical position defined how the participants negotiated the content information of the subject being studied in the curriculum materials. Participants described the effort they took to locate the information: to get to it right away and to make sure it was included in the learning experience. If the information was missing or unclear, the teacher felt responsible for bringing this to the surface before engaging in practice with their students. Even though the content information presented ambiguity because it needed to be identified and extracted from the document, the participants ultimately hoped they were achieving its integrity and fulfilling an obligation to its authority.

Although participants felt responsible for keeping intact the unit's content, they demonstrated a professional sense of autonomy in other aspects of the curriculum, which included design, instructional strategies, and evaluation. This negotiation aligned more closely with constructivist assumptions where the participants negotiated meaning of the curriculum through a reflexive relationship with practice and used curriculum theory to guide, confirm, and legitimize their practice. Campbell (2006) concurs that teachers not only adapt curriculum to fit their teaching practices but also adapt their practices in order

to align with curriculum. This strategy enabled the participants to interface the dynamics and context of classroom practice and in particular to take into consideration the needs of their students. The participants' responses to curriculum materials were more in line with Gherardi's (1999) and Nicolini et al.'s (2003) description of an active bricoleur.

Bricoleurs learn to operate in the environment they are given and are in a continual state of considering and reconsidering, always with the view of what is at hand. The participants expressed that the classroom experience did not always go the way the book said, but instead their reality was to respond to the context and react to the moment of the practical dimension. In this way, the participants negotiated curriculum within the multifaceted aspects of their practice. They were aware of their abilities to think fast on their feet and to adjust quickly to aspects of practice that emerged as they lived and worked through their practice. As Campbell asserts, professional discretion is located not within the parameters of those curriculum expectations defined by external forces, but rather it is found within the teachers' own capacity to exercise curricular and pedagogical knowledge with personal discretion, judgement, and proficiency.

The curriculum documents held two distinct meanings for the participants, one aligned to formal positivist ideas of theory and the other with the constructivist nature of their practice. Unaware of their epistemic assumptions in a theory of practice, the participants responded in a way they saw as normative and demonstrated a process that integrated both positivist and constructivist perceptions. They adhered to positivist ideas by identifying their obligation to the content information within the document. At the same time, to negotiate meaning within a complex, multifaceted practice, they also strategized ways to construct knowledge to align with a personal theory of practice.

In their research, Clandinin and Connelly (1995) found that teachers straddle different epistemological positions rooted in differing views of theory and practice. Davis (2004) points out that being rooted in differing views is possible when ideology is conceived as a genealogy rather than a linear history. Davis et al. (2008) assert that constructivist thinking has emerged from the cracks or untenable reasoning of positivist ideology, and so ideological concepts do not die off but rather become integrated in interpretations that are capable of combining different strands of beliefs even when they seem to be ideologically incompatible. Hoekstra et al. (2007) argue that previous research grounded in the positivist assumptions of curriculum implementation reflects an incomplete and distorted view of a complex process. This study aligns with the work of researchers who argue that limiting a theory of teacher learning to positivist epistemic assumptions cannot fully explain how teachers negotiate meaning of new curriculum.

Limitations of Curriculum Documents

The discrepancy between theory and practice can also be identified in the limitations or inadequacies the curriculum documents represented to teacher practice. To negotiate meaning in practice, the participants adapted and modified the curriculum material so that it could be integrated into the context of their situation. Time was an important point of discussion for the participants, who found that their ability to negotiate meaning of the curriculum was limited or constrained by time. They found that the lessons took longer than described, so they reduced the curriculum unit so that it would not go on and on and would be compatible with the classroom time schedule. Hargreaves (1994) argues that theoretical perception as represented in curriculum documents is quite different from a teacher's practical reality. As an example, Hargreaves explains that the

dominant theoretical conception of time in curriculum documents is viewed as *monochronic*, where action is viewed as concentrating on doing one thing at a time, in series, as a linear progression through a procedural set of stages. Conceived this way, there is little sensitivity to the particularities of context or the needs of the moment. In contrast, teachers are faced with negotiating this meaning of time within a classroom that operates in *polychronic* time; where time concentrates on doing several things at once in combination. Hargreaves's contrast of conceptions of time in curriculum and in practice represents the duality and potential incompatible character and limitations of curriculum text. Hargreaves further asserts that when perceptions of teacher practice are situated in theoretical conceptions of curriculum documents, positivist assumptions are dominant and the theoretical dimensions of curriculum are legitimized.

A second limitation of curriculum documents is situated in the scope they represent to teachers. The participants recognized that the curriculum held far more potential for learning than they could possibly pay attention to. They saw them as generative documents and discussed how they would renegotiate the same unit in the future to add aspects they had missed. Davis (2004) points out that when one is confronted with materials that are big and overwhelming, such as curriculum, one is unable to consciously negotiate its comprehensive form, so the perceptual system makes distinctions or reductions that enable one to make sense of smaller fragments of the material. The participants demonstrated this reduction in the way they approached the new unit, first browsing the entire document but then focussing on one or two lessons and then distinguishing portions of each lesson. As Scribner (2005) points out, what one pays attention to in the curriculum is somewhat serendipitous. Each person independently

selects certain curricular distinctions in relationship to their practice and points of reference. One example was how the participants focussed their attention on the “still” or reflective aspect of the DIGS learning model and essentially ignored the other three elements (discover, investigate, and give). This single element of the DIGS model was distinguished even though the curriculum theoretically wove four attributes in a comprehensive model of learning. The participants also applied personal professional interests as criteria for distinguishing aspects of the curriculum. For example, there was anticipation that the new curriculum would provide new ideas concerning differentiated learning, and the participants looked for this specifically in the curriculum materials. The participants did not presume they were capable of negotiating the curriculum documents in their entirety but recognized the limits of their capacity.

Another limitation posed by the curriculum documents was in their capacity to address the fluctuating student dynamic that teachers negotiated in their practice. Scribner (2005) points out that, in the context of practice, the relationship between teachers and students is an essential factor in determining what choices or distinctions teachers make to negotiate meaning. Davis and Sumara (2006) concur that, in practice, the theoretical constructs of curriculum cannot be prescriptive to the students and the dynamic they form in a classroom. The meaning of the curriculum materials could be quite different in another time or with other students. The participants expected that curriculum materials would be negotiated quite differently with another group of students. If the student dynamic was positive and stable, then the participants were more willing to try new ideas from the curriculum and to take professional risks that they saw as good for the class. If the dynamic was tense and difficult, then the participants would choose not to be creative

but, instead, would resort to traditional, stable, and redundant methods. The participants' decision or professional discretion was motivated by a desire to be a good teacher, which was directly linked to their students. In negotiating meaning of the curriculum, this goal was a point of reference and an overriding factor in the way the participants interpreted and applied the curriculum.

Shkedi (1998) explains that rather than representing a prescriptive ideal form, curriculum materials are inadequate curricular resolutions that must be interpreted, modified, and adapted to make sense in a more complex and emergent practice.

Teachers often use their own agendas for their curricular ones that conflict with the suggested curriculum. The teachers' solutions are their attempts to transform an inadequate curriculum story into a more complete, compelling, and convincing one. To create a better story, they bring to class additional materials; draw from their experiences and other curriculum guides to apply their personal stories to this incomplete story. (Shkedi, p. 211)

From a practical perspective, the participants did not view curriculum documents as ideal; instead, they saw them as inadequate or incomplete for what they required in the context of practice. The curriculum documents provided a framework, a stability that from a distance appeared essentially unchanging, but in the reality of their practice, the participants saw the cracks and inadequacies and responded beyond the curricular prescriptions with an interpretation that aligned with their context.

Constructivist Model of Teacher Learning

Davis (2004) argues that there is positivist pretence to think that, since knowledge is external, we can all understand, interpret, and apply knowledge in the same way. When

this does not happen, the discrepancy is viewed as a deficiency of a positivist process. The participants' experience of applying curriculum documents did not align with this positivist assumption. In the context of a living practice, the participants found it necessary to engage their professional discretion as they interpreted the curriculum materials in the context of their practice. Davis explains that a constructivist learning theory assumes that knowledge construction is framed in terms of the emergence of structure as it undergoes continuous adaptations that are conditioned, but never determined, by the knower's context. He furthers this line of reasoning by asserting that the emerging structure is unique to each knower and subject to their experience in a particular time and place. Each person is compelled to contextually construe the world in her or his own way while being consistent with whom he or she has been (Davis; Wheatley, 2006). Wheatley argues that nothing really transfers; everything is always new and different and unique to each of us. Viewed from this perspective, negotiating the meaning of curriculum is a rich process that achieves diversity; the gap between theory and practice is an inherent outcome of that process.

The outcome of this study is a constructivist conceptualization of a theoretical framework of teacher learning and teacher knowledge that serves to understand the process of how teachers negotiate meaning of curriculum materials. It identifies and situates four constructs (reference, growth, autonomy, and reconciliation) essential to the process. Like Doll (1993a, 1993b), who conceptualized a constructivist model of curriculum in the form of four attributes rather than a linear, chronological, step-by-step model, this study identified four attributes that convey points of negotiation. These points too are not necessarily experienced in a chronological process but rather are available in a

framework of teacher learning and teacher knowledge. In this framework, learning and knowledge are inextricably linked and dynamically changed by forces of stability and instability.

The negotiating attributes of *teacher knowledge* are those of reference and autonomy. The participants saw themselves being shaped by their experiences and the context in which they found themselves. Wheatley (2006) defines this as a personal or self-reference and asserts that each individual “maintains a clear sense of its individual identity within a larger network of relationships that helps shape its identity” (p. 20). As a stabilizing force, reference anchors teacher knowledge and provides the potential to empower the teacher with rest, confidence, and trust to negotiate meaning. Stronks and Blomberg (1993) assert that it is this stability that enables or motivates teachers to “step into” the instability of the learning process. Within the constructs of teacher knowledge (reference and autonomy), each of the participants were physically engaged in their practice in a learning process, in relationship to their unique points of reference. Within and in relationship to these points of reference, the disturbing aspects of the new curriculum were evoked and distinguished. The attention to disturbance compelled the participants to make a decision to step into a knowledge gap of uncertainty and instability so that they could achieve meaning of the curriculum in their practice. Partnered with reference, autonomy demonstrates that knowledge construction is always a matter of free will. Learning capacity is linked to a teacher’s will for creativity or redundancy, the will to step into uncertainty or to stay with what is already known. Teacher knowledge is not achieved through a passive process but rather requires dynamic autonomy.

The instability of autonomy in a theory of teacher knowledge is a necessary construct. In a constructivist perspective, knowledge is conceptualized as always

unfinished; it is generative and therefore must have access to the instability of possibility. Davis et al. (2008) conceptualize this relationship as an *enabling constraint*. They assert that the process of teacher learning is set in teacher knowledge that is simultaneously rule bound (constraining) and capable of flexible, unanticipated possibilities (enabling). Points of reference (constraining) provide a framework from which to be enabled by limiting a pool of limitless possibility so that possibility or distinctions become evident. In a paradox, autonomy in teacher knowledge is predestined by points of reference while at the same time free to attend to potential points of growth or gaps that initiate the process of teacher learning. Davis et al. and Wheatley (2006) summarize this apparent paradox by explaining that the capacity for learning or self-organization lies in two critical elements: a clear sense of identity (reference) and openness to freedom (autonomy). Reference and autonomy, together, form an essential relationship and a necessary tension for teacher learning.

In a similar complementary relationship, the attributes of *teacher learning*, growth and reconciliation, provide stable and unstable forces. Doll (1993a) describes the process of learning as shifting from instability to stability, and he argues that both are needed to propel the learner forward. As the instability of growth pervades, the learner seeks stability of reconciliation to make sense or to negotiate meaning of the disorder. To negotiate meaning, the participants sought to achieve aliveness, satisfaction, and a joy of learning for both themselves and their students. Even when new ideas seemed counterintuitive and counterproductive to their theory of practice, the participants were compelled by the creativity and the potential emotional delight they might achieve and saw it as good for their students. They weighed their concerns about missing the curriculum, about losing control or

time, about the simplicity of a direct didactic method, with the novelty and potentiality of what new curricular ideas could achieve. The stability of redundancy did not deter them from engaging in diverse and new ways of learning. In the second interview, the participants reflected delight, satisfaction, and a joy of learning in recounting how they reconciled perceived challenges (points of growth) they had articulated in the first interview.

The conceptualization of dissipative structures is useful to explain the process of deconstructing knowledge to achieve knowledge construction. Capra (2002) interprets Prigogine's meaning of a dissipative structure.

A dissipative structure, as described by Prigogine, is an open system that maintains itself in a state far from equilibrium, yet nevertheless stable: the same overall structure is maintained in spite of an ongoing flow and change of components. Prigogine chose the term "dissipative structures" to emphasize this close interplay between structure on the one hand and flow and change (or dissipation) on the other. (p. 13)

Although it may seem contradictory, there is an assertion that loss is necessary to create newness and order (Doll, 1993b). Wheatley (2006) adds that dissipative structures were named to bring attention to their paradoxical nature. They dissipate or give up their form in order to recreate themselves into new forms. Doll explains that disturbances are the stimuli that excite an organism to submit to dissipative structures so that it can better respond to its environment. Within a theoretical framework of teacher knowledge and teacher learning, the participants in their practice deconstructed established points of reference to construct knowledge of the theoretical curriculum. In the process of establishing knowledge, they achieved a sense of reconciliation.

Figure 1 is a graphic representation of a constructivist model of how teachers negotiate meaning of new curriculum. It identifies the relationship of teacher knowledge and teacher learning and the emotional attributes that characterize and identify the process of negotiating meaning. The model demonstrates that stability and instability are always inherent in the process; when attributes of reference, growth, and autonomy are more predominant, unstable forces are also more dynamic, whereas when attributes of reference, autonomy, and reconciliation are more influential in the negotiation process, stabilizing forces are important in constructing knowledge. When negotiating meaning is viewed as a unique structural process, set in a theoretical framework of constructs (reference, autonomy, growth, and reconciliation) that is continuously evoking knowledge and learning, diversity of knowledge construction is inherent.

Privatization and Collegial Relationship

The results of this study demonstrate that collegial difference in how curriculum is interpreted and applied in practice is inherent in a constructivist process of teacher learning. While straddling positivist and constructivist assumptions, the participants found entry points in the negotiation of curriculum to legitimize professional difference and diversity, but at a cost. The dominance of traditional positivist assumptions concerning curriculum authority and the necessity for professional authority in practice operated simultaneously even though ideologically they were incompatible. The participants negotiated these authorities by operating in isolation and therefore made pedagogic difference less accessible so that positivist and formal assumptions about

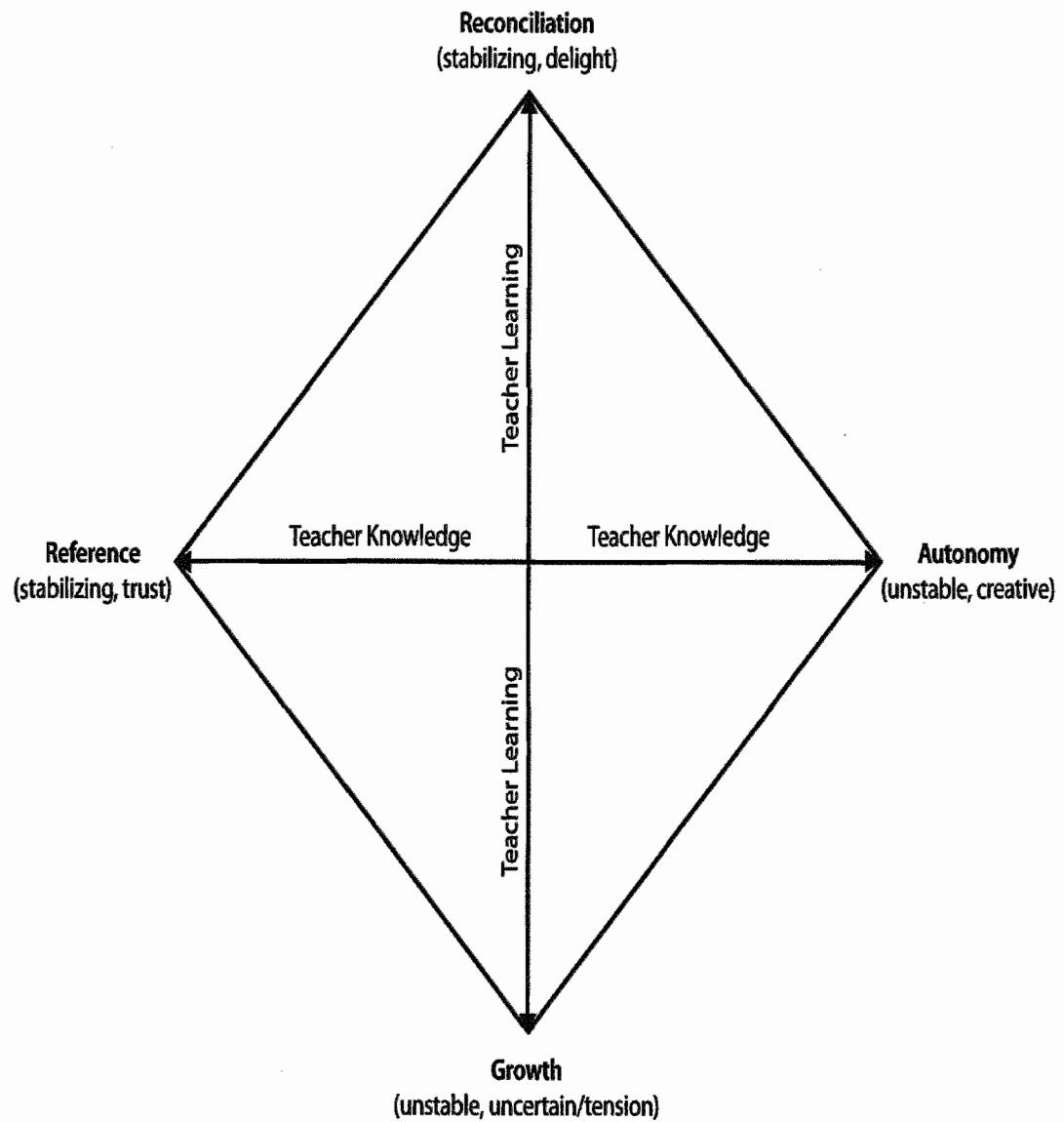


Figure 1. Constructivist model of teacher knowledge and teacher learning.

curriculum would prevail. As Hargreaves (1994) has found, to protect their practice from external forces, teachers view their practice as personal, intimate, and even sacred. The participants spoke of and rationalized their decision to privatize their work. Privatization was also respectfully afforded their colleagues, and so autonomy and difference were silently understood but not interfered with. This was not a matter of resistance; rather it was an integral necessity for professional development and learning in a positivist environment. As Clandinin and Connelly (1995) point out, to negotiate meaning of curriculum, teachers must also devise strategies to enable them to straddle different epistemological positions. Their response to keep difference hidden by privatization is further evidence that canonical or formal teacher knowledge is legitimized while noncanonical or informal teacher practice remains unacknowledged in curriculum matters (Hoekstra et al., 2007; Seely Brown & Duguid, 1991). As a positivist construct, individualism is a powerful theme in the study, where isolation was sought by the participants to protect their autonomy and where isolation, discretion, and strong boundaries were the best way to preserve this individuality.

Being respectful, the participants did not want to burden their colleagues by coordinating collaborative efforts for curriculum implementation. The participants perceived that collaboration did not make the work easier and more effective and, when given the opportunity to work together by curriculum design, the participants choose not to work with their colleagues. Essentially, parts of the curriculum unit were ignored for the sake of maintaining privatization. They believed that negotiating meaning of new curriculum materials was an individualistic task for which they assumed they were meant to be competent. There was also a sense that the strain of different teaching styles and theories of

practice would make collaboration difficult and sensitive. Congeniality (harmony) was a more powerful construct than collegiality. Even though the participants articulated a desire for more collegial interaction, they did not substantiate this desire with their actions. If collegiality meant taking away precious time from preparation and classroom work, if it caused colleagues to upset the work of others, and if it confounded or disturbed a practice that already was saturated and never finished, the cost was too great. Privatization was interpreted as a sensible adaptive strategy by the participants. This interpretation concurs with Hargreaves (1994), who found that isolation was self-imposed and actively worked for by teachers.

Privatization reduces potential collegial tension and pushes knowledge diversity underground. Since knowledge construction is a unique and diverse process, Mitchell and Sackney (2009) argue that privatization raises moral issues for the institution when teacher knowledge is not transparent or shared. They have found that, when teachers operate in isolation, it results in dysfunctional redundancy and low-capacity schools. Privatization has the potential to create guilt and secrecy as teachers negotiate perceived deficiencies in their practice. Avoiding tension also reduces capacity for potential growth. Participants recognized that divergence of interpretation existed but rationalized that a discussion of theory and practice would only create more tension and discord, so difference was better left unsaid. This perspective further shuts out diversity and limits accessibility to teacher knowledge.

Implications for Teacher Learning

Senge (1990) tells the story of three blind men and an elephant, where each man, being blind, had independently conceptualized or constructed the reality of the elephant

depending on a point of view. One can already see the limits this story poses. Without communicating to each other, each man's knowledge about the elephant was only partial and incomplete. Curriculum documents can be viewed in much the same way. They are big, unwieldy, and overwhelming (like the elephant) to the conscious senses of interpretation. The participants expressed how the curriculum documents were much bigger than they could negotiate and said that there was more in the documents than could be interpreted and achieved in one experience. Just as one can see a more informed construction of knowledge for the blind men by sharing their diverse interpretations, so too is the potential for collegial sharing.

To achieve a sense of consistency and collective coherence about curriculum, Wheatley (2006) and Seely Brown and Duguid (2001) suggest that an organization focus on creating conditions that both generate new knowledge and help it to be freely shared. From a constructivist perspective, these conditions are located in the accessibility of difference available in a network of relationship, where teachers have increased freedom of choice as they are exposed to a diversity of interpretation available from colleagues and from the collective environment itself. Wheatley explains that openness to the environment over time achieves a stronger system.

What comes to dominate over time is not outside influences, but the self-organizing dynamics of the system itself. Because it partners *with* its environment, the system develops increasing autonomy *from* the environment and also develops new capacities that make it increasingly resourceful. I say this is contrary thinking because we usually act from the reverse belief. We believe that in order to maintain ourselves and protect our individual freedom, we must defend ourselves

from external forces. We tend to think that isolation, secrecy, and strong boundaries are the best way to preserve individuality. But this self-organizing world teaches that boundaries not only create distinctions; they are also places for communication and exchange. Because system members engage in continual exchanges among themselves and with their environment, the system develops greater freedom from its environment. (Wheatley, p. 84)

In this view, as collegial relationship develops beyond the classroom, its leverage creates conditions within the classroom for richer autonomy and diversity, which results in greater capacity and resilience for problem solving. Awareness of interpretation and its variability develops a wiser sense of what is going on and what needs to be done. Davis et al. (2008) and Wheatley argue that access to diversity increases intelligent potential, which improves the capacity to negotiate meaning.

Little (2003) and Gherardi (2008) assert that practice is a legitimate and an essential space for professional learning. In particular, learning is initiated by the disturbances that arise in practice. Thayer-Bacon (2003) points out that it is the disturbing qualities of difference that draw out creativity and the potential for learning. “Others draw attention to themselves and us, through their differences, for while they have much in common with us, they are irreducibly distinct and different from us” (p. 251). For Little and Horn (2007), normalizing problems of practice functions as a bridge to a more probing investigation of teaching knowledge and learning. Little adds that de-contextualized accounts of practice form a pervasive and meaningful element of discourse among teachers in an out-of-classroom context. She writes that, in making sense of one another’s professional stories, treating them as *situation-ally* meaningful is a

central and constitutive feature in teachers' collective practice. Practice provides a space for teacher learning and supplies a substantive resource for the learning community. Practice is where theory comes to life and where negotiating meaning means bringing life to theory.

The study articulated and strengthened the role of disclosing experiences in a professional narrative. The interviews provided an articulated narration that allowed the participants to physically hear about their professional experience and to listen to any feedback the listener added. The dialogue allowed them to reflect, think, and affirm what had actually happened in practice. It strengthened the participants' own capacity for sense making, and the conversation further clarified, inspired, and reconciled their thinking. The interview dialogue made explicit and accessible an experience that would typically be left tacit. Mitchell and Sackney (2009) substantiate this finding by asserting that professional narratives supply tangible resources for teacher knowledge.

We found that telling professional stories was one of the most common forms of knowledge creation, meaning making, and knowledge transfer. As teachers talked to one another about what they did, what they hoped for, what they were worried about, and what they believed, with respect to teaching and learning, the narrative descriptors of practice conveyed knowledge in an accessible form that could be examined, borrowed, and transformed by their colleagues. (p. 52)

The professional narrative demonstrates a potential mechanism for knowledge sharing and also knowledge learning. This study legitimizes the development of interpretive resources that facilitate informal professional conversations so that teachers see them as important to their professional development. Mitchell and Sackney argue that the cultural

outcome of informal dialogue would be the creation of new relational narratives and practice. It would have the potential to achieve a shift away from privatized practice and would contribute to a breakdown of the sacred theory–practice story.

The interviews also demonstrated the effectiveness of teacher reflection as a relational and interactive act. In contrast, individual journaling did not have the same reflective capacity as the interviews offered. They were used in as an organizational tool rather than reflective assessment. The participants found that the journal might be useful the next time but that the interviews provided more immediate, deeper, and relevant professional feedback. Although the interviews were not meant to study implications for professional development, this format emerged from the study as a possible mechanism for articulating professional matters about practice that was not a typical form of professional development for the participants. In particular, the interviews provided reconciliation of teacher learning that had been experienced in the negotiation of new curriculum. This relational experience of teacher learning in the interviews is an important theoretical aspect of constructivist epistemology and provides an interpretive mechanism that names and authenticates practice. Little and Horn (2007) add that in time these specific experiences and narrations become generalized and usable in a theory of practice.

As Wheatley (2006) observes, when people engage together to learn more about their collective identity, it affects them in surprising ways. In the interview, even though I experienced resonance in professional storytelling, there was also surprise in distinctions. At this moment pretence was disbanded. This surprise was also expressed by the participants when they listened to the reflections of their students. As I listened to the

participants in the interviews, I was drawn to the differences and found not only surprise but deep respect and caring for them as they spoke candidly, authentically, and with commitment. As Wheatley asserts, when we share the meaning ascribed to the work of practice, there is the potential to discover a deeper commonality within the diversity as the network reconceptualizes. This community achieves professional development that is beyond the experience, experts, and outside forces. As Capra (2002) encourages, we need to find ways to nurture networks of communication in order to connect the system to more of itself, to increase the organization's connectivity, and to increase its capacity for learning. Mitchell and Sackney (2009) add, "The greater the interaction, the greater is the cross-fertilization of ideas and the greater the growth of the professional story" (p. 50).

When I consider the possibility of facilitating teacher dialogue as a leadership initiative, I come face to face with the sceptic notion of an "idealistic" proposal. As Collinson and Fedoruk Cook (2007) reflect, "individual performance has been emphasized for so many decades, both in schools and in the workplace, that collective learning and systematic thinking may sound impossibly ideal" (p. 157). Collaboration and community are not foreign concepts. There is an intrinsic desire to be collegial, and yet the literature and the participants expressed the reluctance of teachers to submit to contrived interventions for interaction, to give up the private nature of their practice. There are benefits of collaboration in a positivist framework, but for teachers there is also the risk of revealing deficiency and jeopardizing congeniality. Little (1990) adds,

School teaching had endured largely an assemblage of entrepreneurial individuals whose autonomy is grounded in norms of privacy and non interference and is sustained by the very organization of teaching work. Teachers are now being

pressed, invited, and cajoled into ventures in “collaboration,” but the organization of their daily work often gives them scant reasons for doing so. (p. 530)

When collaboration is linked with the burden of accountability and product, the potential for relational teacher learning and communion, for inspiration and delight, is lost, and apathy is the anticipated outcome (Evans, 1996).

The constructivist assumptions about collegiality differ in a significant way from positivist ones. The interviews conducted in this study provided an experience that removed the burden of imposition, judgement, and product. In the interviews, the participants submitted to the conversation, to the dialogue, to the moment. There were no obligations, no outcomes imposed on the process, and yet the potential to affect the future, although uncertain, was profound. The participants provided tangible examples of how the dialogue in the interviews affected their practice. Over the course of curricular implementation, they tracked and attended to the ideas and challenges articulated in the first interview and spoke of their reconciliation in the second interview. The interviews provided a space for knowledge, a space for interpretation and learning that was autonomously attended to by the participants. Aspects of teacher knowledge, released into a relational network, providing diversity, caring, and deep respect, increase the capacity for teacher learning in a community of learners who share and uphold the emerging structures of knowledge that are the outcome of a powerful network.

Implications for Curriculum Development

When curriculum is conceptualized with a constructivist lens, curriculum is no longer a theoretical construct in the positivist sense. Its intention is no longer imposing, nor does it have prescriptive authority. Grundy (1987) describes it as a cultural

construction: Its function is to provide sense-making and structure to organize a set of human educational experiences. Thayer-Bacon (2003) adds that curriculum works in partnership with practice, adding clarity and possibility to teachers' work as teachers provide students with experiences that challenge and facilitate knowledge construction. Professional discretion is an essential construct to negotiate meaning and a legitimate consideration for curriculum developers.

On the one hand, it may seem that teachers have a desire for prescriptive curriculum. Interpreted from a positivist perspective, this desire may imply that teachers seek redundancy rather than creativity, but as Davis et al. (2008) point out, redundancy is a complementary construct of diversity. A constructivist perspective sees that curriculum documents must provide clarity, but in that clarity, teachers have freedom. Attributes of redundancy and diversity are important design elements in curriculum materials where clarity (constraint) is enabling. How can curriculum documents be written with a sense of clarity and possibility? How is curriculum developed to have sufficient redundancy while open to diversity? These are questions curriculum developers need to ask as they reflect on the materials they have created. As reflected by Doll's (1993a, 1993b) curriculum model, if the curriculum is rich, it evokes enough disturbing qualities to motivate the teacher in a process of teacher learning. The quality of disturbances is relative to sufficient redundancy, so both must be considered in curriculum development.

Davis's (2004) assertion that teachers are predisposed to reduce and make distinctions when negotiating meaning of the curriculum is another important consideration for curriculum developers. This aspect of negotiation implies that curriculum developers devise mechanisms in the document that compel teachers to return

to the big picture or to a comprehensive view. The use of overviews, essential questions, or a “big idea,” as introduced by Wiggins and McTighe (1998) and used in the *Creation Studies* series, enabled the participants to see the documents with a thematic lens that equipped them to “zoom out” from time to time as they negotiated meaning. This was a feature the participants were beginning to distinguish in the curriculum materials and were developing meaning for their practice.

Participants also saw the recursive value of repeating the unit, knowing that there were many aspects they had not engaged in but had become aware of as they negotiated meaning. They saw many new possibilities as they implemented the curriculum and looked forward to returning and exploring these possibilities. When developing curriculum materials, an appreciation for an emergent curricular process can be reflected in the materials. The curriculum materials provide enough clarity but also sufficient possibility for robust professional development. The curriculum is not viewed as a finished product, but rather it remains open to possibility. Doll (1993b) describes curriculum that aligns with constructivist epistemology as transformative. “A transformative curriculum, then, is one that allows for, encourages, and develops this natural capacity for complex organization; and through the process of transformation the curriculum continually regenerates itself and those involved with it” (p. 87). In a constructivist perspective, curriculum development is not self-serving; rather its vision is to ascribe a name to what we do, a commitment to its tangible yet diverse life, and anticipation to its future.

Implications for Further Research

In response to the prevailing privatized nature of practice, developing mechanisms to enhance collegial interaction and relationship in curricular matters is a leadership initiative. Further research is required to identify what kinds of leadership are necessary to encourage and promote collegial dynamics from the vantage of a constructivist view. In light of the theory of teacher learning and teacher knowledge proposed by this study, three important leadership considerations warrant further study: understanding points of reference, investigating the process of tension and reconciliation, and developing collegiality.

First, this study acknowledges the essential construct of reference in teacher knowledge and teacher learning. Professional learning sees new ideas as emergent in character as teachers reflect on their current theory of practice to negotiate meaning of new ideas. When the approach to negotiating meaning diminishes past practices and glorifies new ones, teachers are pitted against their own theory of practice and are asked to discard their old ideas and to make new choices. This approach does not honour or respect the role of reference in a theory of teacher learning. A constructivist lens acknowledges that learning is predestined by reference, and therefore teacher learning is linked to teacher knowledge as a process of negotiating meaning. Understanding the role of reference and how it can be strengthened and be made resilient so that it benefits the process of teacher learning is an important aspect of research.

Ballet et al. (2006), Little and Horn (2007), and Gherardi (2008) assert that research drawn from practical experiences offers access to a primary and critical source of knowledge about professional practice. Little and Horn argue that paying attention to

aspects of disturbance or professional issues that evoke tension in practice identify and locate important points of growth in teacher learning. In a constructivist theory of teacher learning, chaos or dissipation are necessary constructs and therefore should not be avoided or penalized but rather seen as an entry point for innovation and growth.

Opportunity to discuss and identify where teachers experience tension in negotiating meaning of curriculum has the potential to further understand how teachers learn in the context of their practice. In the first interview, the participants identified aspects of the curriculum that evoked tension for them and then followed these in the second interview to a point of reconciliation. Research that focuses attention on this process has the potential to investigate teacher learning using the model proposed in this study.

Contrived collegiality or instituted collaboration does not get at the heart of an organic and living relationship that teachers have with each other. Exploring modes of informal outreach that is motivating and supportive is an opportunity to make professional knowledge accessible. Developing trust, vocabulary, and professional legitimacy to discuss both formal and informal aspects of practice is an ontological shift that may require sensitive and patient leadership as teachers reframe their thinking from deficiency and judgement to problem finding and solving. The outcomes of collegiality are uncertain, but in a constructivist view there is important learning potential in the professional relationships that colleagues have with one another. Little and Horn (2007) express a desire to develop a conceptual model of generative dialogue to bring to the surface interpretive resources by which teachers make sense of their experience. Further research to develop such a model is also an implication of this research.

Final Thoughts

At the conclusion of this study, I find a profound appreciation for the process that teachers negotiate to bring meaning to curriculum in their classrooms, a process that is far more complex and multifaceted than curriculum documents can ever represent. I find that, in a framework of reference, growth, autonomy, and reconciliation, teachers negotiate meaning for their practice. The quality and condition of each attribute has a determination in the outcome of that negotiation. Negotiating meaning of theoretical documents was a process of interpretation that resulted in diverse knowledge construction as teachers interfaced abstract constructs in a living practice. In particular, their base of epistemic assumptions played a critical role in how the participants negotiated meaning in new curriculum; it did not define the process in which they negotiated meaning, but it did frame what they paid attention to and how they interpreted the theoretical concepts. Palmer (1993) asserts that the way we teach depends on the way we think people know, and pedagogy reflects this epistemic position, regardless of curriculum theory or design. This assertion did not mean that the participants were operating in a redundant practice; rather I found the participants to be thoughtful, committed to working and improving their teaching practices, and open to new ideas that would have meaning in their practice. As Hargreaves (1994) observes, teachers drive themselves with intrinsic motivation and commitment and do not need external direction or pressure for professional growth. Throughout the process of negotiating meaning, the participants were intrinsically predisposed and positioned for professional development.

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Appendix A

Creation Studies – Social Studies Framework

<i>Creation Studies - Social Studies Perspective and Framework (grades 3–6)</i>					
Strand	Grade 3	Grade 4	Grade 5	Grade 6	Grades 4/5/6
God Keep our Land (* <i>Heritage and Citizenship</i>)	Canadian Citizenship	Expedition Canada Early Exploration – Conflict, Hope, and Healing	Governing Canadians From Far and Wide	Canada and Its Trading Partners Canada – Reaching Beyond Its Borders	Exploring Ontario Why Is There French on My Cereal Box (New France)
One Body, Many Parts (* <i>Heritage & Citizenship</i>)	Our Historical Community	First Nations of This Land	Ancient Farming Communities	Ancient Greek Trading Communities	
All God’s Children (* <i>Canada and World Connections</i>)	Countries Around the World	Our Global Neighbours (template unit)		Our American Neighbours	
<i>*Indicates Ontario Ministry of Education and Training Strand</i>					

Appendix B

Interview 1 Questions

1. In your personal questionnaire, you were asked to comment briefly on your philosophy of education. You have been teaching now for a number of years; would you please talk a little bit about how you see yourself in that role? What do you believe is important to being a good teacher? Where or how do you think you came to believe that?
2. As a teacher you have already had the experience of implementing curriculum for the first time. Taking into consideration your previous experience, what do you anticipate in the delivery of this new curriculum? Can you describe how you will approach this?
3. Would you please talk about the unit you will be implementing? How do you feel about this unit? Are you excited? Anxious? Do you foresee any challenges?
4. What do you perceive will be the outcomes of this particular unit? How do you think your students will respond?

Appendix C

Interview 2 Questions

1. As you reflect on the experience of implementing this curriculum these past 6 weeks, what stands out in your mind? What were the highlights? What were the challenges?
2. As you review your notes in the unit, what stands out? What did your reflections reveal? What choices did you make? Why did you make those choices? Do these notes impact the way you might deliver this curriculum the second time?
3. As you think about the process of curriculum implementation, can you tell me how this curriculum came to make sense to you? Are there elements you would like to understand better or implement differently in the future?
4. Having participated in this study, is there anything about curriculum implementation that you have learned and that you would like to share? Is there anything else you would like to talk about as it relates to this experience?

Appendix D

Participant Background Survey

The completion of this form is to gather confidential background information that provides further references for contact purposes and additional understanding for this research. You are not required to answer any question and may freely decline to respond to any one or more questions.

Name _____

Date _____

Address

Phone number _____ Email _____

Number of years teaching:

University(ies) attended:

Degree(s):

Current teaching position: _____ Full-time or part-time (%) _____

Briefly describe your teaching career (what have you taught, where, for how long etc.)

Have you taught Creation Studies curriculum prior to this current unit? _____

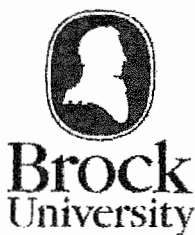
If yes, which ones?

Briefly describe or explain your philosophy of education/teaching. What is important to you as a teacher? What are some central values or principles that frame your work as a teacher?

What pseudonym would you like me to use for you in this research project?

Appendix E

Ethics Clearance



Office of Research Services
Research Ethics Office
St. Catharines, Ontario, Canada L2S 3A1
T: 905-688-5550 Ext. 3055/4870 T: 905-688-0718

www.brocku.ca

DATE: March 28, 2008

FROM: Michelle McGinn, Chair
Research Ethics Board (REB) *Michelle K. MC*

TO: Dr. Coral Mitchell, Education
Cathy VanderVliet

FILE: 07-259 VANDERVLiet/MITCHELL

TITLE: Teachers' Perspectives on Implementing Creation Studies Curricula

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as Clarified

This project has received ethics clearance for the period of March 28, 2008 to December 31, 2008 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. *The study may now proceed.*

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/researchservices/forms> to complete the appropriate form Revision or Modification to an Ongoing Application.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form *Continuing Review/Final Report* is required.

Please quote your REB file number on all future correspondence.

MM/kw